

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

As a leading global aerospace company, Boeing develops, manufactures and services commercial airplanes, defense products and space systems for customers in over 150 countries. As a top U.S. exporter, the company leverages the talents of a global supplier base to advance economic opportunity, sustainability and community impact. Boeing's diverse team is committed to innovating for the future; leading with sustainability; and cultivating a culture based on the company's core values of safety, quality, integrity and sustainability.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data and indicate whether you will be providing emissions data for past reporting years.

Reporting year

Start date

January 1 2022

End date

December 31 2022

Indicate if you are providing emissions data for past reporting years

Yes

Select the number of past reporting years you will be providing Scope 1 emissions data for

2 years

Select the number of past reporting years you will be providing Scope 2 emissions data for

2 years

Select the number of past reporting years you will be providing Scope 3 emissions data for

2 years

C0.3

(C0.3) Select the countries/areas in which you operate.

- Australia
- Bahrain
- Belgium
- Brazil
- Canada
- China
- Denmark
- Ethiopia
- France
- Germany
- Greece
- Hungary
- India
- Indonesia
- Ireland
- Israel
- Italy
- Japan
- Kazakhstan
- Kuwait
- Luxembourg
- Malaysia
- Mexico
- Netherlands
- New Zealand
- Norway
- Oman
- Poland
- Qatar
- Republic of Korea
- Romania
- Russian Federation
- Saudi Arabia
- Singapore
- South Africa
- Spain
- Sweden
- Switzerland
- Taiwan, China
- Thailand
- Turkey
- Ukraine
- United Arab Emirates
- United Kingdom of Great Britain and Northern Ireland
- United States of America
- Viet Nam

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

USD

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.

Operational control

C-T00.7/C-TS0.7

(C-T00.7/C-TS0.7) For which transport modes will you be providing data?

Aviation

C0.8

(C0.8) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?

Indicate whether you are able to provide a unique identifier for your organization	Provide your unique identifier
Yes, an ISIN code	US097023AU94

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual or committee	Responsibilities for climate-related issues
Board-level committee	<p>The Board is responsible for overseeing management in the execution of its risk management responsibilities and for assessing the Company's approach to risk management. The Board regularly assesses significant risks to the Company in the course of reviews of corporate strategy and the development of our long-range business plan including significant new development programs. The Board addresses a variety of sustainability-related topics, including through its committees, in the following areas: Risk Management, Product Safety, Diversity and Inclusion, Climate Change.</p> <p>As part of its responsibilities, the Board and its standing committees also regularly review strategic, operational, financial, compensation and compliance risks with senior management. Examples of risk oversight activities conducted by the Board's committees, subject to committee report-outs and full discussion at the Board level, are set forth in our 2022 Proxy statement, and include the physical and transitional risks of climate change, as outlined in our 2022 Annual Report Form 10-K.</p> <p>The board (through the GPP Committee) is also responsible for reviewing and monitoring the Companies' practices related to corporate sustainability, including environmental stewardship and climate change.</p>

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Scope of board-level oversight	Please explain
Scheduled – some meetings	<ul style="list-style-type: none"> Overseeing major capital expenditures Reviewing innovation/R&D priorities Overseeing and guiding employee incentives Reviewing and guiding strategy Monitoring progress towards corporate targets Reviewing and guiding the risk management process 	<Not Applicable>	<p>The Board is responsible for overseeing management in the execution of its risk management responsibilities and for assessing the Company's approach to risk management. The Board regularly assesses significant risks to the Company in the course of reviews of corporate strategy and the development of our long-range business plan including significant new development programs. The Board addresses a variety of sustainability-related topics, through its committees, including the following areas: Risk Management, Product Safety, Diversity and Inclusion, Climate Change.</p> <p>As part of its responsibilities, the Board and its standing committees also regularly review strategic, operational, financial, compensation and compliance risks with senior management. Examples of risk oversight activities conducted by the Board at both the Board and committee level, are set forth in our Proxy statement, and include the physical and transitional risks of climate change, as outlined in our 2022 Annual Report on Form 10-K.</p> <p>The board (through the Governance and Public Policy, or GPP, Committee) is also responsible for reviewing and monitoring the Company's practices related to corporate sustainability, including environmental stewardship and climate change.</p>

C1.1d

(C1.1d) Does your organization have at least one board member with competence on climate-related issues?

	Board member(s) have competence on climate-related issues	Criteria used to assess competence of board member(s) on climate-related issues	Primary reason for no board-level competence on climate-related issues	Explain why your organization does not have at least one board member with competence on climate-related issues and any plans to address board-level competence in the future
Row 1	Yes	<p>All Board members have skills & experience with Risk Management and this experience assessing and managing risks enables directors to effectively oversee the most significant risks facing Boeing. A number of a directors have experience in climate change risk management strategies and other climate-related issues and this information can be found in our 2023 Proxy Statement, page 7</p> <p>Our Board's Governance & Public Policy Committee is responsible for identifying and assessing potential board candidates and recommending nominees for the Board's approval. In this process, the Committee assesses the qualifications of nominees on an ongoing basis, including with respect to sustainability. The Committee reviews annually the skills and characteristics required of directors in light of the Board's current composition, evolving business requirements, and the long-term interests of the Company and its shareholders. This assessment includes consideration of experience in areas that are relevant to Boeing's global activities, such as aerospace, engineering, manufacturing, safety, risk management, software, operations, finance, marketing, sustainability, international business and affairs, government, and public policy, among other factors. Any experience in sustainability, including specific competence with respect to climate-related issues, would be considered in the overall assessment of a director nominee.</p>	<Not Applicable>	<Not Applicable>

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Position or committee

Chief Executive Officer (CEO)

Climate-related responsibilities of this position

- Providing climate-related employee incentives
- Integrating climate-related issues into the strategy
- Setting climate-related corporate targets
- Monitoring progress against climate-related corporate targets
- Assessing climate-related risks and opportunities
- Managing climate-related risks and opportunities
- Other, please specify

Coverage of responsibilities

<Not Applicable>

Reporting line

Reports to the board directly

Frequency of reporting to the board on climate-related issues via this reporting line

Half-yearly

Please explain

The Boeing President & CEO is a member of the Board of Directors as well as the most senior management executive. The skills and experience of this executive include climate change risk management strategies and other climate-related issues, to enable enhanced Board oversight of environmental policies, strategies and priorities for a sustainable aerospace future.

Position or committee

Chief Sustainability Officer (CSO)

Climate-related responsibilities of this position

- Managing annual budgets for climate mitigation activities
- Providing climate-related employee incentives
- Developing a climate transition plan
- Implementing a climate transition plan
- Integrating climate-related issues into the strategy
- Conducting climate-related scenario analysis
- Setting climate-related corporate targets
- Monitoring progress against climate-related corporate targets

Coverage of responsibilities

<Not Applicable>

Reporting line

CEO reporting line

Frequency of reporting to the board on climate-related issues via this reporting line

Half-yearly

Please explain

The Chief Sustainability Officer (CSO) is responsible for enterprise-wide sustainability strategy, focusing on priorities, stakeholder-oriented reporting and company performance. Boeing's CSO is an Executive Council member reporting to Boeing's CEO. The CSO reports the progress of Boeing's sustainability objectives and stakeholder-oriented reports regularly to the GPP Committee and the full Board. The Board reviews and provides input on the sustainability report.

Position or committee

Risk committee

Climate-related responsibilities of this position

Assessing climate-related risks and opportunities
Managing climate-related risks and opportunities

Coverage of responsibilities

<Not Applicable>

Reporting line

Reports to the board directly

Frequency of reporting to the board on climate-related issues via this reporting line

Annually

Please explain

It is the responsibility of the Board and senior management to ensure that we avoid imprudent risks and mitigate the strategic, technological, operational and compliance risks we face, all with our core values of safety, quality, integrity and sustainability at the forefront. Our Board has significant climate change risk expertise and management skills and experience, which is described further in the 2023 Proxy Statement. Senior management is responsible for day-to-day management of risk, including the creation of appropriate risk management policies and procedures. Boeing has two overarching risk processes: Enterprise Risk Management (ERM) and Compliance Risk Management (CRM). All functions and business units participate in both ERM and CRM, including the Global Enterprise Sustainability organization. Global ERM and CRM risk assessments together are completed multiple times per year to determine the most critical risks to Boeing. The Board's Audit Committee receives annual reports on Boeing's ERM & CRM processes and regular reporting on the Company's compliance and ethics programs from the Company's Controller and Chief Compliance Officer (CCO). The full Board of Directors reviews enterprise risks on a regular basis as well as conducts regular reviews of our ethics and compliance programs. ERM assesses strategic risks to the company and industry, including topics within the environmental, social and governance elements of sustainability. The CRM process is overseen by the Compliance Risk Management Board (CRMB), chaired by Boeing's chief compliance officer. The CRMB includes senior company leaders who provide oversight on Boeing's CRM process designed to identify, evaluate and prioritize the most significant compliance risks; assess mitigation strategies; and provide visibility to Boeing's CEO and Audit Committee of the Board of Directors.

Position or committee

Other, please specify (Government Operations function)

Climate-related responsibilities of this position

Managing public policy engagement that may impact the climate

Coverage of responsibilities

<Not Applicable>

Reporting line

CEO reporting line

Frequency of reporting to the board on climate-related issues via this reporting line

As important matters arise

Please explain

The Executive Vice President of Government Operations at The Boeing Company is responsible for advancing the company's public policy priorities, including all U.S. federal, state and local government liaison operations, as well as Boeing Global Engagement, the company's global philanthropic organization. This position also serves as Boeing's chief lobbyist and is a member of the company's Executive Council.

Position or committee

Other, please specify (Global Public Policy)

Climate-related responsibilities of this position

Managing public policy engagement that may impact the climate

Coverage of responsibilities

<Not Applicable>

Reporting line

CEO reporting line

Frequency of reporting to the board on climate-related issues via this reporting line

As important matters arise

Please explain

The Senior Vice President of Global Public Policy is responsible for advising and executing on Boeing's global public policy matters in support of the company's priorities and optimizing relationships with key stakeholders in the U.S. and around the world.

Position or committee

Other, please specify (Supply Chain Operations Council Chair)

Climate-related responsibilities of this position

Managing value chain engagement on climate-related issues

Coverage of responsibilities

<Not Applicable>

Reporting line

CEO reporting line

Frequency of reporting to the board on climate-related issues via this reporting line

As important matters arise

Please explain

The Boeing Supply Chain Operations Council Chair is responsible for driving supply chain functional excellence across the enterprise through people, processes and tools, as well as ensuring Boeing remains focused on its next-generation production system and services operational life cycle. This executive leads the Global Services Supply Chain function, a division with operations in over 70 countries and more than 300 locations around the world. In this capacity, the executive leads all aspects of the supply chain function, including distribution and component and engine maintenance, repair and overhaul (MRO), and is responsible for delivering high-quality, efficient and repeatable service offerings to the end customer.

Position or committee

Other C-Suite Officer, please specify (CHRO)

Climate-related responsibilities of this position

Providing climate-related employee incentives

Coverage of responsibilities

<Not Applicable>

Reporting line

CEO reporting line

Frequency of reporting to the board on climate-related issues via this reporting line

As important matters arise

Please explain

The Chief Human Resources Officer and Executive Vice President of Human Resources for The Boeing Company is responsible for the company's leadership and learning, talent planning, employee and labor relations, total rewards, and diversity and inclusion initiatives. A number of employee incentive programs are part of the total rewards package. The company's operational performance influences the annual incentives, and this performance includes a climate metric. Note that the Board's Compensation Committee makes annual pay decisions for our executive officers.

Position or committee

Other C-Suite Officer, please specify (Chief Engineer)

Climate-related responsibilities of this position

Managing major capital and/or operational expenditures related to low-carbon products or services (including R&D)

Coverage of responsibilities

<Not Applicable>

Reporting line

CEO reporting line

Frequency of reporting to the board on climate-related issues via this reporting line

As important matters arise

Please explain

The Chief Engineer of The Boeing Company and Executive Vice President of Engineering, Test & Technology leads the Boeing Engineering function of tens of thousands of engineers worldwide and oversees the company's technology vision, strategy and investment. The responsibilities also include oversight of all aspects of safety and technical integrity of Boeing products and services. The corresponding organization is an incubator for businesses that will define the future of urban, regional and global mobility, as well as those aimed at near-term opportunities.

Position or committee

Other C-Suite Officer, please specify (Chief Strategy Officer)

Climate-related responsibilities of this position

Managing climate-related acquisitions, mergers, and divestitures

Coverage of responsibilities

<Not Applicable>

Reporting line

CEO reporting line

Frequency of reporting to the board on climate-related issues via this reporting line

As important matters arise

Please explain

The Chief Strategy Officer of The Boeing Company and Senior Vice President of Strategy and Corporate Development is responsible for the company's overarching strategy, including long-term planning; global business and corporate development; strategic investments, acquisitions and divestitures; and the company's Ventures businesses.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	In early 2022, we made a number of modifications to our annual and long-term incentive programs for executives to expand the existing focus on operational excellence, adding a climate-related metric to our performance awards.

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Entitled to incentive

Management group

Type of incentive

Monetary reward

Incentive(s)

Bonus – set figure

Performance indicator(s)

Progress towards a climate-related target
Reduction in total energy consumption

Incentive plan(s) this incentive is linked to

Short-Term Incentive Plan

Further details of incentive(s)

Starting in 2022 and continuing into 2023, Boeing enhanced its enterprise annual incentive design to incorporate climate and equity, diversity and inclusion metrics into the Company Performance Score formula, which determines payouts under the company's largest employee incentive plans. These include the Performance-Based Incentive Plan, the Employee Incentive Plan, the Management Incentive Plan, and the Executive Annual Incentive Plan. The climate metric is designed to incentivize and reward employee behavior that reduces our energy consumption across the enterprise, and along with equity, diversity and inclusion and our other operational goals, accounts for 25% of the overall Company Performance Score driving payouts under our incentive plans. Individual performance is also taken into account in determining individual employee payouts under most of our incentive plans.

Explain how this incentive contributes to the implementation of your organization's climate commitments and/or climate transition plan

Starting in 2022 and continuing into 2023, Boeing enhanced its enterprise annual incentive design to incorporate climate and equity, diversity and inclusion metrics into the Company Performance Score formula, which determines payouts under the company's largest employee incentive plans. These include the Performance-Based Incentive Plan, the Employee Incentive Plan, the Management Incentive Plan, and the Executive Annual Incentive Plan. The climate metric is designed to incentivize and reward employee behavior that reduces our energy consumption across the enterprise, and along with equity, diversity and inclusion and our other operational goals, accounts for 25% of the overall Company Performance Score driving payouts under our incentive plans. Individual performance is also taken into account in determining individual employee payouts under most of our incentive plans.

Entitled to incentive

Corporate executive team

Type of incentive

Monetary reward

Incentive(s)

Bonus – set figure

Performance indicator(s)

Progress towards a climate-related target
Reduction in total energy consumption

Incentive plan(s) this incentive is linked to

Both Short-Term and Long-Term Incentive Plan

Further details of incentive(s)

Starting in 2022 and continuing into 2023, Boeing enhanced its enterprise annual incentive design to incorporate climate and equity, diversity and inclusion metrics into the Company Performance Score formula, which determines payouts under the company's largest employee incentive plans. These include the Performance-Based Incentive Plan, the Employee Incentive Plan, the Management Incentive Plan, and the Executive Annual Incentive Plan. The climate metric is designed to incentivize and reward employee behavior that reduces our energy consumption across the enterprise, and along with equity, diversity and inclusion and our other operational goals, accounts for 25% of the overall Company Performance Score driving payouts under our incentive plans. Individual performance is also taken into account in determining individual employee payouts under most of our incentive plans.

Explain how this incentive contributes to the implementation of your organization's climate commitments and/or climate transition plan

Starting in 2022 and continuing into 2023, Boeing enhanced its enterprise annual incentive design to incorporate climate and equity, diversity and inclusion metrics into the Company Performance Score formula, which determines payouts under the company's largest employee incentive plans. These include the Performance-Based Incentive Plan, the Employee Incentive Plan, the Management Incentive Plan, and the Executive Annual Incentive Plan. The climate metric is designed to incentivize and reward employee behavior that reduces our energy consumption across the enterprise, and along with equity, diversity and inclusion and our other operational goals, accounts for 25% of the overall Company Performance Score driving payouts under our incentive plans. Individual performance is also taken into account in determining individual employee payouts under most of our incentive plans.

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	0	1	
Medium-term	1	10	
Long-term	10	100	

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

Boeing considers an opportunity or risk to have substantive financial impact if it could have a significant effect on our financial position, results of operations, and/or cash flows. Boeing considers an opportunity or risk to have substantive strategic impact on our business if it could have a significant effect on our markets, products, operations, customers, and/or suppliers.

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered

Direct operations
Upstream
Downstream

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

More than once a year

Time horizon(s) covered

Short-term
Medium-term
Long-term

Description of process

Boeing has two overarching risk processes: Enterprise Risk Management (ERM) and Compliance Risk Management (CRM). All functions and business units participate in both ERM and CRM, including the Global Enterprise Sustainability (GES) organization. Global ERM and CRM risk assessments are completed more than once per year to determine the most critical risks to Boeing and risks are spread across short-, medium-, and long-term horizons. As part of Boeing's ERM processes, we assess risks, issues and opportunities at both the company level and the asset level to determine potential impacts to the business and subsequently incorporate any potential financial impacts into our standard business planning, and opportunity and risk management processes. To assess risks, issues, and opportunities, Boeing employs a rigorous risk analysis framework that takes into account the likelihood of each risk and opportunity as well as the consequence of the manifestation of a given risk, issue, or opportunity. Risks which are deemed to be sufficiently likely and consequential are regularly elevated and analyzed for Board-level discussion. Other risks are managed at the appropriate management levels, based on their potential consequence to the business and their likelihood of occurrence. These processes are the same at both the company and asset levels. While risk, issue, and opportunity approach is part of the standard business operations throughout programs and sites on an on-going basis, there are also annual Board of Director reviews of top-level, strategic, operational, and compliance risks.

The CRM process is overseen by the Compliance Risk Management Board (CRMB), chaired by Boeing's chief compliance officer. The CRMB includes senior company leaders who provide oversight on Boeing's CRM process designed to identify, evaluate, and prioritize the most significant compliance risks; assess mitigation strategies; and provide visibility to Boeing's CEO and Audit Committee of the Board of Directors. The CRMB's charter is to collaborate to create a proactive culture of compliance; integrate compliance risk management across the enterprise; drive effective and efficient compliance controls to achieve business objectives; and lead compliance risk mitigation and transparency. Where Boeing's CRM process deals primarily with compliance risks, the ERM program serves to surface significant operational and strategic risks to Boeing corporate leadership.

The ERM process is led out of the Controller's office within Boeing; on a regular basis, risk assessments are updated and reviewed by a community of subject matter experts and executive leaders representing every function and business unit throughout the company. These risks are then presented for in-depth discussion with the Chief Executive Officer, Chief Financial Officer, and Board of Directors Audit Committee each spring as well as the Board of Directors each summer. The ERM process employs a risk and control framework for managing the company's risks, which include climate-related risks. Risks to Boeing and our supporting supply chain are evaluated and managed based on both asset cost and impact to our customers, inclusive of facilities and equipment. Extensive planning is conducted across the enterprise, with consideration of disruption to key operating facilities. Risks and opportunities associated with the environment and climate change are subject to our standard opportunity and risk and governance processes. As stated in our Corporate Governance Principles, the Board has general oversight responsibilities for: reviewing the long-range business plans of the Company and monitoring performance relative to achievement of those plans; advising management regarding long-range strategic issues and risks facing the Company; and overseeing management in the execution of its risk management responsibilities and assessing the Company's overall approach to risk management.

The results from the risk assessments and sustainability priority assessment are compared for commonality, and overlapping risks receive additional monitoring and management. For example, Innovation and Clean Tech is a key priority for Boeing, and our 2030 goal of 100% SAF-compatible current and future commercial airplanes is a key component of the commercial aviation industry's goal to be carbon neutral by 2050. Environmental and climate change related risks are included in CRM and ERM processes when appropriate and as identified by the programs and businesses in standard risk identification processes. GES elevates environmental and climate change related risks to the enterprise level.

It is the responsibility of the Board and senior management to ensure that we avoid imprudent risks and mitigate the many strategic, technological, operational, and compliance risks we face, all with our core values of safety, quality, integrity and sustainability at the forefront. Senior management is responsible for day-to-day management of risk, including the creation of appropriate risk management policies and procedures. The Board is responsible for overseeing management in the execution of its risk management responsibilities and for assessing the company's approach to risk management. The Board regularly assesses significant risks to the company in the course of reviews of corporate strategy and the development of our long-range business plan, including significant new development programs. As part of its responsibilities, the Board and its standing committees also regularly review strategic, operational, financial, compensation, and compliance risks with senior management.

C2.2a

(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

Relevance & inclusion	Please explain

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	<p>There are currently aircraft fuel-efficiency standards in effect outside of the United States, which have also been adopted by the USEPA (and are to be implemented by the FAA pursuant to regulations that are currently in development). The standards apply to new aircraft type designs, and to certain changed aircraft type designs for aircraft already in production, as of 2023. Those in-production aircraft which by 2028 do not meet the standard will no longer be able to be produced unless their designs are sufficiently modified or unless there are mitigation measures adopted (e.g., an exemption mechanism). In addition, the United States has issued an updated Aviation Climate Action Plan to achieve net zero emissions by 2050. The US government's strategy anticipates the development of ambitious international standards to reduce CO2 emissions through the use of aircraft technologies, aviation fuels, and emissions offsets.</p> <p>We are subject to the US Environmental Protection Agency mandatory GHG reporting rule, and other various US federal, state, local and non-US laws and regulations relating to environmental protection. We continually assess our compliance status and management of environmental matters to ensure that our operations are in compliance with all applicable environmental regulations. Investigation, remediation, and operation and maintenance costs associated with environmental compliance and management of sites are a normal, recurring part of our business to mitigate risk.</p> <p>As part of Boeing's ERM and CRM processes, we assess climate change related risks and opportunities at both the company level and the asset level to determine potential impacts to the business, and subsequently incorporate any potential financial impacts into our standard business planning, and opportunity and risk management processes. These processes are the same at both the company and at asset levels. While opportunity and risk management is part of standard business operations throughout programs and sites from a daily management perspective, there are also annual Board reviews of top-level, strategic, operational and compliance risks. Both the Audit Committee and full Board regularly address and review all key risks of the business, and climate change related and other environmental risks are among the topics explicitly covered.</p>
Emerging regulation	Relevant, always included	<p>It is reasonably possible that costs incurred to ensure continued environmental compliance could impact operations, financial condition or cash flows if additional operational or remedial requirements are imposed by regulators. Therefore, we assess emerging regulation-related risk carefully. For example, increasing GHG regulation in Washington, Oregon and California could increase cost to our operations in those states. However, Boeing is acting at its operating sites across the United States to reduce energy consumption and increase our use of renewable energy to mitigate these risks. Boeing supports the goals of the Paris Climate Agreement. The U.S. re-commitment is important for addressing this global challenge. Of equal importance in the context of using multi-lateral forums to address climate change, is the International Civil Aviation Organization (ICAO) and its aircraft CO2 emissions standard, which was adopted in 2017. There are currently aircraft fuel standards in effect outside of the United States. These standards are also being adopted in the United States, and we look forward to working with the U.S. government to ensure Boeing aircraft are certified under this standard. In addition, various national governments and ICAO proceedings indicate that there is potential for additional aircraft emissions restrictions (e.g., for CO2, non-volatile particulate matter, nitrogen oxides, etc.).</p> <p>As part of Boeing's ERM and CRM processes, we assess climate change related risks and opportunities at both the company level and the asset level to determine potential impacts to the business and subsequently incorporate any potential financial impacts into our standard business planning, and opportunity and risk management processes. These processes are the same at both the company and asset levels. While opportunity and risk management is part of standard business operations throughout programs and sites from a daily management perspective, there are also annual Board reviews of top-level, strategic, operational and compliance risks. Both the Audit Committee and full Board regularly address and review all key risks of the business, and climate change related and other environmental risks are among the topics explicitly covered. In addition, environmental and climate change related risks identified through these processes are shared with the Global Sustainability Council which reviews progress with the Executive Council yearly.</p>
Technology	Relevant, always included	<p>To decarbonize aviation, we are focused on four key areas: fleet renewal, network operational efficiency, renewable energy transition and advanced technology. We see governments playing a role in technological advancement of sustainable aviation fuel (SAF). De-risking project capital for pioneer and early-stage facilities is also crucial for ensuring that more SAF technologies reach commercial scale. As a technology and innovation leader, Boeing invests in Design for Sustainability, a systems engineering approach to improve the performance of our products, services and operations. The goal of this approach is to reduce the risks and expenses associated with a product footprint and accelerate sustainability performance gains at all stages in the product life cycle. As part of ERM and CRM, we assess climate change related risks and opportunities at the company level and the asset level to determine potential impacts to the business and subsequently incorporate any potential financial impacts into our standard business planning, and opportunity and risk management processes. These processes are the same at both the company and asset levels. While opportunity and risk management is part of standard business operations throughout programs and sites from a daily management perspective, there are also annual Board reviews of top-level, strategic, operational and compliance risks. Both the Audit Committee and full Board regularly address and review all key risks of the business, and climate change related and other environmental risks are among the topics explicitly covered. In addition, sustainability-related risks identified through these processes are shared with the Global Sustainability Council, which reviews progress with the Executive Council yearly.</p> <p>Some highlights in 2022:</p> <ul style="list-style-type: none"> - Wisk secured \$450 million from Boeing to advance certified autonomous electric flight. During the year, Boeing and Wisk unveiled concept of operations for urban air mobility. Furthermore, Wisk unveiled world's first autonomous, 4-seat, all-electric, vertical takeoff and landing air taxi. - Announced multiyear commitment to Yale Center for Natural Carbon Capture - Unveiled 2022 ecoDemonstrator, a 777-200ER testing 30 new technologies to help decarbonize aviation. The ecoDemonstrator program collaborated with NASA to test SAF emissions. - Debuted Cascade, a data modeling tool that visualizes how to get to a net-zero carbon emission future for commercial aviation
Legal	Relevant, always included	<p>Just as we continually assess emerging regulations, we also monitor emerging legal theories that could lead to climate-related litigation claims. At the present time we do not deem such litigation risk to be relevant because we do not believe that there are meaningful legal bases for such claims against Boeing.</p> <p>As part of Boeing's ERM and CRM processes, we assess climate change related risks and opportunities at both the company level and the asset level to determine potential impacts to the business and subsequently incorporate any potential financial impacts into our standard business planning, and opportunity and risk management processes. These processes are the same at both the company and asset levels. While opportunity and risk management is part of standard business operations throughout programs and sites from a daily management perspective, there are also annual Board reviews of top-level, strategic, operational and compliance risks. Both the Audit Committee and full Board regularly address and review all key risks of the business, and climate change related and other environmental risks are among the topics explicitly covered. In addition, environmental and climate change related risks identified through these processes are shared with the Global Sustainability Council which reviews progress with the Executive Council yearly.</p>
Market	Relevant, always included	<p>Climate-related market risks could include the costs of raw materials, insurance, and capital as well as customer and consumer behavior. One example of a market risk is for raw materials: We rely on other companies, including U.S. and non-U.S. subcontractors and suppliers, to provide and produce raw materials, integrated components and sub-assemblies, and production commodities and to perform some of the services that we provide to our customers. If one or more of our suppliers or subcontractors experiences financial difficulties, delivery delays or other performance problems, we may be unable to meet commitments to our customers or incur additional costs. In addition, if one or more of the raw materials on which we depend (such as aluminum, titanium or composites) becomes unavailable to us or our suppliers, or is available only at very high prices, we may be unable to deliver one or more of our products in a timely fashion or at acceptable costs. In some instances, we depend upon a single source of supply. Any service disruption from one of these suppliers, either due to circumstances beyond the supplier's control, such as geopolitical developments, or as a result of performance problems or financial difficulties, could have a material adverse effect on our ability to meet commitments to our customers or increase our operating costs.</p> <p>As part of Boeing's ERM and CRM processes, we assess climate change related risks and opportunities at both the company level and the asset level to determine potential impacts to the business and subsequently incorporate any potential financial impacts into our standard business planning, and opportunity and risk management processes. These processes are the same at both the company and asset levels. While opportunity and risk management is part of standard business operations throughout programs and sites from a daily management perspective, there are also annual Board reviews of top-level, strategic, operational and compliance risks. Both the Audit Committee and full Board regularly address and review all key risks of the business, and climate change related and other environmental risks are among the topics explicitly covered. In addition, environmental and climate change related risks identified through these processes are shared with the Global Sustainability Council which reviews progress with the Executive Council yearly.</p>
Reputation	Relevant, always included	<p>Increasing stakeholder environmental, social and governance (ESG) expectations, physical and transition risks associated with climate change, and emerging ESG regulation and policy requirements may pose risk to our market outlook, brand and reputation, financial outlook, cost of capital, global supply chain and production continuity, which may impact our ability to achieve long-term business objectives.</p> <p>As part of Boeing's ERM and CRM processes, we assess climate change related risks and opportunities at both the company level and the asset level to determine potential impacts to the business and subsequently incorporate any potential financial impacts into our standard business planning, and opportunity and risk management processes. These processes are the same at both the company and asset levels. While opportunity and risk management is part of standard business operations throughout programs and sites from a daily management perspective, there are also annual Board reviews of top-level, strategic, operational and compliance risks. Both the Audit Committee and full Board regularly address and review all key risks of the business, and climate change related and other environmental risks are among the topics explicitly covered. In addition, environmental and climate change related risks identified through these processes are shared with the Global Sustainability Council which reviews progress with the Executive Council yearly.</p>

	Relevance & inclusion	Please explain
Acute physical	Relevant, always included	<p>Our Business Continuity Management process implements the company's commitment to ensuring its resilience through enterprise business continuity planning. The business continuity program has five components of preparedness: Business, Emergency, Information Technology, Human Resources and Supply Chain. All five components work together to help Boeing plan for, manage, and recover from emergencies, disasters and disruptive events. A centralized team of subject matter experts work in partnership with business unit and functional program leaders to reduce the risks to critical operations, and incidents with the potential to impact business continuity are monitored on a 24/7/365 basis through our Global Security Operations Center (GSOC). Business Continuity is part of the corporate Enterprise Risk Management (ERM) operational risk framework. These activities are performed in close coordination with Boeing Capital Corporation's Risk Management organization, which works to help insure and protect Boeing's assets and portfolio.</p> <p>As part of Boeing's ERM and CRM processes, we assess climate change related risks and opportunities at both the company level and the asset level to determine potential impacts to the business and subsequently incorporate any potential financial impacts into our standard business planning, and opportunity and risk management processes. These processes are the same at both the company and asset levels. While opportunity and risk management is part of standard business operations throughout programs and sites from a daily management perspective, there are also annual Board reviews of top-level, strategic, operational and compliance risks. Both the Audit Committee and full Board regularly address and review all key risks of the business, and climate change related and other environmental risks are among the topics explicitly covered. In addition, environmental and climate change related risks identified through these processes are shared with the Global Sustainability Council which reviews progress with the Executive Council yearly.</p>
Chronic physical	Relevant, always included	<p>Gradual, longer-term (chronic) changes in climate are also considered. As an example, we considered the effects of water availability in our qualitative climate scenario analysis, with potential impacts on direct operations and the value chain. Water availability issues could affect drinking water supply, manufacturing (non-potable) water supply, surface runoff, and hydroelectricity generating power in the grids upon which we rely. Changing precipitation patterns, changing temperatures (air, water), heat stress, erosion, sea level rise—all chronic physical risks—were also considered in our scenario analysis.</p> <p>As part of Boeing's ERM and CRM processes, we assess climate change related risks and opportunities at both the company level and the asset level to determine potential impacts to the business and subsequently incorporate any potential financial impacts into our standard business planning, and opportunity and risk management processes. These processes are the same at both the company and asset levels. While opportunity and risk management is part of standard business operations throughout programs and sites from a daily management perspective, there are also annual Board reviews of top-level, strategic, operational and compliance risks. Both the Audit Committee and full Board regularly address and review all key risks of the business, and climate change related and other environmental risks are among the topics explicitly covered. In addition, environmental and climate change related risks identified through these processes are shared with the Global Sustainability Council, which reviews progress with the Executive Council yearly.</p>

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Downstream

Risk type & Primary climate-related risk driver

Emerging regulation	Other, please specify (Future laws and regulations relating to climate change)
---------------------	--

Primary potential financial impact

Increased indirect (operating) costs

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

Changes in environmental and climate change laws or regulations could lead to additional operational restrictions and compliance requirements for our products and potentially require new or additional investment in product designs. Increasing aircraft performance standards and requirements on manufacturing and product air pollutant emissions, especially greenhouse gas (GHG) emissions, may result in increased costs or reputational risks and could limit our ability to manufacture and/or market certain of our products at acceptable costs, or at all.

Time horizon

Medium-term

Likelihood

Unknown

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Changes in environmental and climate change laws or regulations could lead to additional operational restrictions and compliance requirements for our products and potentially require new or additional investment in product designs. At this time, with no clear path for industries given emerging regulations, the financial impact is very

difficult to quantify.

Cost of response to risk

0

Description of response and explanation of cost calculation

Aircraft fuel efficiency standards are present in some areas of the globe. These standards are also being adopted in the USA & could preclude deliveries after 2027 of certain older aircraft models that may not meet the standards, unless they are upgraded or exemptions are granted. The magnitude of risk could be high, if not mitigated. We have selected "unknown" as the likelihood because we cannot quantify the expected impacts of our potential mitigation strategies, with respect to these older aircraft models. Our strategy to decarbonize aerospace—to reduce emissions—focuses on four key areas: fleet renewal, network operational efficiency, renewable energy transition and advanced technology. Safe, sustainable aerospace requires different certified solutions tailored to the needs, capabilities and constraints of different regions and markets. We have made solid progress in areas where we see the biggest potential. New commercial airplanes provide significant efficiency gains, with each generation reducing fuel use and emissions. Boeing has invested more than \$60 billion over the last 10 years in key strategic areas to improve fuel efficiency and reduce emissions, including innovative technologies such as carbon composite materials, advanced high-bypass ratio engine designs, and other aerodynamic improvements. Decarbonizing aerospace will take more than a single company's investment. Airlines have invested more than \$1 trillion to purchase these new airplanes, in many cases to replace older, less-efficient models. Many airlines accelerated retiring older airplanes during the pandemic, a trend that may continue. We continue to make progress on the technical journey working with our suppliers to ensure our commercial airplanes are 100% SAF compatible by 2030. We also support the commercial aviation industry's ambition to achieve net-zero carbon emissions for global civil aviation operations by 2050. We are partnering across the aerospace community to collectively deliver on our ambition on climate action. SAF as a drop in fuel is currently approved to be blended at 50% blend with Jet A & works with existing airplanes and offers the largest potential to reduce carbon emissions over the next 20 to 30 years in all aviation segments. Boeing's intent is to help catalyze SAF scaling through subject matter expertise, investments in product compatibility work, purchasing SAF for our own fuel use, and our partnerships and policy advocacy.

Comment

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation	Other, please specify (Future laws and regulations relating to climate change)
---------------------	--

Primary potential financial impact

Increased indirect (operating) costs

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

Changes in environmental and climate change laws or regulations could lead to additional operational restrictions and compliance requirements for us or our facilities, require new or additional investment in facilities or manufacturing/processes, result in carbon offset investments or otherwise could negatively impact our business and/or competitive position. Upcoming laws and regulations such as the proposed United States SEC rule on climate disclosures and the European Corporate Sustainability Reporting Directive for example are requiring companies like Boeing to report on ESG with guidance being shared at various times with review periods; however, this is an entirely new type of non-financial reporting for global companies like Boeing. The impact will be major as Boeing seeks to get ahead of these laws and regulations before release so that we are adequately prepared and can meet the various standards and frameworks to report on.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Changes in environmental and climate change laws or regulations will likely lead to additional operational restrictions and compliance requirements for our products and potentially require new or additional investment in product designs. At this time, with no clear path for industries given emerging regulations, the financial impact is very difficult to quantify.

Cost of response to risk

0

Description of response and explanation of cost calculation

There are currently pending company or facility GHG emissions regulations, for which the magnitude of risk could be medium, if not mitigated. We have selected "likely" because of the number of initiatives among regulatory agencies, including carbon pricing mechanisms; the variety and range of different emerging schemes means that we cannot fully quantify the expected impacts of potential mitigation strategies, but economic analyses associated with proposed regulations provide notional estimations.

Boeing strives to reduce operational GHG emissions. Boeing achieved net-zero at manufacturing and work sites, for a third year, by emphasizing and incentivizing employee conservation and increasing renewable electricity use while procuring verified offsets for the remaining GHG. Boeing intends to drive absolute GHG emissions reductions through renewable energy, continued efficiency improvements, implementation of additional conservation best practices, and sustainable design standards that can influence future planning and infrastructure.

Our 2030 goals include the reduction of operational GHG emissions by 55% and the continuation of net-zero emissions for operations. Additionally, we have set a goal to achieve 100% renewable electricity by 2030 in our operations through a variety of verifiable mechanisms, including direct purchases, renewable energy certificates and virtual power purchase agreements. Our targets for Scope 1 and 2 emissions aligns to a 1.5° global warming potential scenario, in support of the global climate goals including the United Nations Sustainable Development Goal 13 (Climate Action).

Comment

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical	Other, please specify (Damaging or extreme weather including climate change)
----------------	--

Primary potential financial impact

Increased indirect (operating) costs

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

Our business may be impacted by disruptions from damaging or extreme weather (including effects of climate change). These disruptions could affect our internal operations or our suppliers' operations and delay delivery of products and services to our customers. Any significant production delays could impact our sales, increase our expenses and/or have an adverse effect on the reputation of Boeing and of our products and services.

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Effects of climate change and the subsequent the financial impact is very difficult to quantify.

Cost of response to risk

0

Description of response and explanation of cost calculation

Extreme weather events have affected Boeing and our value chain, and we have therefore selected "very likely" as the likelihood. Based on experience with such events, the magnitude of risk could be medium-low, if not mitigated by Boeing risk management and insurance. Climate change is among the topics included in our enterprise risk management. Climate risks and opportunities inform our business strategy, investments and operational decision-making as evidenced by our ambitions and actions in our products and operations. Boeing performs ongoing analysis to monitor the risk and impacts from increased frequency of extreme weather events in our operations and takes mitigation actions accordingly to limit the financial impact of disruptions.

For some hurricanes proximate to our operations, the company has been affected primarily by suspension of operations and preparation for the arrival of the storm (e.g., repositioning aircraft). Potential losses from extreme weather events are mitigated because Boeing has focused on climate resiliency in terms of our physical infrastructure (building design and construction, etc.) and because of our rigorous and detailed emergency response planning.

Boeing's Business Continuity Council provides oversight of acute physical risks to Boeing operations such as hurricanes. Specific aspects include Incident Management and Emergency Preparedness, which ensure extensive cross-functional collaboration before, during, and after an event to minimize the impact of acute physical risks on our operations.

The Boeing Security and Fire Protection Global Security Operations Center (GSOC) provides the following services:

- Continuous visibility of Boeing's strategic risk landscape
- A common operating picture of Boeing's global enterprise
- Centralized emergency and non-emergency dispatch
- Alarm monitoring
- Facilitation of crisis management operations
- Support of business partners
- Strategic intelligence products
- Strategic risk monitoring

The GSOC uses a system to integrate "real-time" risk and threat data from internal and external sources. The system displays the information in a geospatial format. The system helps create a common operating picture, including critical processes, critical suppliers, traveling employees, building status, assets, and other important information.

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Opp1

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Primary potential financial impact

Increased revenues through access to new and emerging markets

Company-specific description

Demand for aviation products and services with increased efficiency and lower-carbon emissions will continue to rise. Boeing is focused on four key areas to decarbonize aviation including Fleet Renewal, Operational Efficiency, Renewable Energy and Advanced Technology. New airplanes provide significant energy gains - each generation has reduced fuel use and emissions by 15%-25%. In addition, each airplane improves upon reliability and maintenance requirements, enabling greater utilization and overall resource productivity.

Boeing provides fuel optimization solutions, including a suite of software applications, which reduce fuel consumption during all phases of flight, and works with governments and Air Navigation Service Providers to implement next generation Air Traffic Management solutions.

Boeing is focused on developing safe and sustainable future commercial airplanes and is investing in research on the enabling technologies for those future airplanes, including the safe and responsible introduction of disruptive and alternative next-generation air vehicles for urban—and potentially regional—transportation demands. This research includes electric and hydrogen-fueled propulsion systems for future aircraft.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

The impact has not been quantified financially.

Cost to realize opportunity

0

Strategy to realize opportunity and explanation of cost calculation

Investments in efficiency improvements allow Boeing to be a commercial aircraft manufacturer of choice. A case study is how our customers recognize the compelling economics and sustainability benefits—including 10% improvement in fuel efficiency and emissions over the competition—of the 777X, which will be the world's largest and most efficient twin-engine jet. We recently launched the latest member of the 777X family, the 777-8 Freighter.

Fuel accounts for up to 40% of airlines' operating costs, so Boeing's commercial products and services development is focused on reducing fuel consumption and improving overall efficiency, including reducing carbon emissions.

Boeing is committed to delivering commercial airplanes that are capable to fly on 100% sustainable aviation fuel by 2030. When achieved, this will enable our airplanes to operate on the maximum amount of sustainable aviation fuel (SAF) and minimize their respective carbon life cycle emissions when flown with SAF.

For operational efficiency improvements the Fuel Dashboard is an intuitive, customizable dashboard and reporting solution. Customers can quickly make informed decisions & adjust their operations in ways that will accelerate fuel-efficiency improvements.

Boeing debuted The Boeing Cascade Climate Impact Model ("Cascade") at the Farnborough International Airshow in 2022, a web application which uses digital technical

data pulled from across the world to visualize how introducing various sustainable aviation options would impact global emissions. It provides a data-driven way for stakeholders to make informed decisions about how to reach the commercial aviation industry's net-zero 2050 ambition.

With increasing urbanization, a growing global population, aging infrastructure and the explosion of ecommerce, there is a need for new, safe, sustainable and accessible modes of transportation of persons and goods. By combining Boeing's technological innovation with new business models and non-traditional partnerships, Boeing seeks to lay the foundation for a next-generation mobility ecosystem. As part of this strategy, Boeing is part of the Wisk JV, which will be the first candidate for certification of an autonomous, passenger-carrying electric vertical takeoff and landing (eVTOL) aircraft in the U.S.

Comment

Product-level lifecycle assessment (LCA) is performed at defined stages of configuration maturity, per Boeing's Enterprise Standard Gated Process. GHG emissions are a key consideration of the LCA.

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Use of more efficient production and distribution processes

Primary potential financial impact

Reduced indirect (operating) costs

Company-specific description

We were named an ENERGY STAR Partner of the Year in 2010 and have received the Partner of the Year Award for Sustained Excellence nearly every year since. Boeing realizes significant savings through energy efficiency improvements and conservation efforts. Many of these initiatives reflect the decade-long partnership between ENERGY STAR and The Boeing Company.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

The impact has not been quantified financially. We are targeting an absolute reduction of 10 percent of energy used in our operations by 2025, when compared to the 2017 baseline. By 2030, we are targeting 100% renewable electricity across the enterprise, through a variety of verifiable mechanisms, including direct purchases, renewable energy certificates and virtual power purchase agreements.

Cost to realize opportunity

0

Strategy to realize opportunity and explanation of cost calculation

Boeing advances and sustains its Energy Management program by following the fundamentals outlined in the ENERGY STAR Guidelines for Energy Management. Boeing's mid-term goals include reducing energy use by 10% and GHG emissions by 25% by 2025, from a 2017 baseline. We are targeting a 55% reduction of GHG emissions by 2030. Actions and projects to support these and future goals demonstrate the strategic impact of this and other climate opportunities. We have provided information about our activities and program management to US EPA as part of the ENERGY STAR Partner of the Year program.

Research done in cooperation with Duke University validates Boeing's emphasis on Lean Energy Assessments, employee behaviors, and accountability.

Comment

Identifier

Opp3

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of lower-emission sources of energy

Primary potential financial impact

Returns on investment in low-emission technology

Company-specific description

Long-term agreements for lower-emission energy sources could help secure stable energy rates and minimize Boeing's risk of added cost due to regulation and other market variables.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

The impact has not been quantified financially. Cost avoidance can be achieved as forward, long-term rates for renewable energy are competitive with traditional forms of energy.

Cost to realize opportunity

0

Strategy to realize opportunity and explanation of cost calculation

Boeing has set several targets for GHG emissions and for energy use:

- A 25% reduction in GHG emissions associated with natural gas and electricity at core metric sites by 2025, from 2017
- A 10% energy use reduction at core metric sites by 2025, from 2017
- A 2030 goal of net zero emissions for Scopes 1 and 2 for all manufacturing and other facilities (achieved as of 2020, through conservation and renewable electricity use while procuring verified offsets for the remaining GHG)
- A 55% Scope 1 and 2 GHG emissions reduction by 2030, from 2017, across the enterprise
- 100% renewable electricity across the enterprise, through a variety of verifiable mechanisms, including direct purchases, renewable energy certificates and virtual power purchase agreements, by 2030

Boeing continues to invest in renewable energy and increased use of renewable energy may reduce potential regulatory burdens, including under regulatory carbon pricing scenarios. The company has targets to increase renewable energy use. Boeing recognizes the opportunity to improve energy performance through strategic investments and deployment of robust energy reduction best practices. Boeing used US EPA tools to develop and implement a new utility budgeting process, which facilitated the development of a data-driven utility budget. Forward-looking energy rates can now be incorporated into budgeting projections. The improved projections allow for an increase in strategic renewable energy procurement.

Comment

Because of continued participation in the EPA Green Power Program, Boeing achieved a ranking of #21 on the 2023 EPA Green Power Partnership list of Fortune 500 companies and a ranking of #29 overall; recognizing Boeing as the top company in aerospace manufacturing. This achievement is because of company commitments to increase use of onsite and offsite renewable energy.

Boeing continues to work towards achieving its 2030 goal of being powered by 100% renewable electricity (through multiple mechanisms), as seen in its recent partnership with the local utility to provide 25% of Boeing Mesa's electricity from a new solar facility, supplementing existing renewable electricity agreements across numerous sites.

Boeing is a recognized leader in the use of renewable energy and energy efficiency, and has reduced energy use in its manufacturing operations significantly over time.

C3. Business Strategy**C3.1**

(C3.1) Does your organization’s strategy include a climate transition plan that aligns with a 1.5°C world?

Row 1

Climate transition plan

No, but our strategy has been influenced by climate-related risks and opportunities, and we are developing a climate transition plan within two years

Publicly available climate transition plan

<Not Applicable>

Mechanism by which feedback is collected from shareholders on your climate transition plan

<Not Applicable>

Description of feedback mechanism

<Not Applicable>

Frequency of feedback collection

<Not Applicable>

Attach any relevant documents which detail your climate transition plan (optional)

<Not Applicable>

Explain why your organization does not have a climate transition plan that aligns with a 1.5°C world and any plans to develop one in the future

As shared in our 2022 Proxy, the Boeing Board of Directors unanimously recommended a vote for a proposal to issue a report, at reasonable expense and excluding confidential information, evaluating and disclosing if and how the company has met the criteria of the Climate Action 100+ Net Zero Indicator, including Scope 3 use of product emissions, or whether it intends to revise its policies to be fully responsive to such Indicator. A majority of shareholders voted their support for this proposal in April 2022.

Explain why climate-related risks and opportunities have not influenced your strategy

<Not Applicable>

C3.2

(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?

	Use of climate-related scenario analysis to inform strategy	Primary reason why your organization does not use climate-related scenario analysis to inform its strategy	Explain why your organization does not use climate-related scenario analysis to inform its strategy and any plans to use it in the future
Row 1	Yes, qualitative	<Not Applicable>	<Not Applicable>

C3.2a

(C3.2a) Provide details of your organization’s use of climate-related scenario analysis.

Climate-related scenario	Scenario analysis coverage	Temperature alignment of scenario	Parameters, assumptions, analytical choices		
<table border="1"> <tr> <td>Transition scenarios</td> <td>Customized publicly available transition scenario</td> </tr> </table>	Transition scenarios	Customized publicly available transition scenario	Company-wide	1.5°C	Transition risks and opportunities were assessed using a scenario based on the key (Paris Agreement) commitment of >190 countries to limit global warming to well below 2°C above pre-industrial levels. The scenario assumes proactive and sustained action to reduce carbon emissions over the next 30 years to build a low carbon economy. The commercial aviation sector’s 2050 goal of net zero is in line with the Paris Agreement. Sources that inform assumptions include projections used in Shared Socio-Economic Pathways (SSP), the IEA (Sustainable Development & NZE2050), IPCC (RCP1.9 & 2.6) and NGFS Orderly Scenario. Assumptions included environmental, social, political, economic, and technological elements. The project qualitatively assessed consequence of transition risks but not likelihood, which is ultimately mitigated by Boeing’s business strategy. The assessment included 13 risks and four opportunities. Boeing is currently evaluating the results and next steps.
Transition scenarios	Customized publicly available transition scenario				
<table border="1"> <tr> <td>Physical climate scenarios</td> <td>RCP 4.5</td> </tr> </table>	Physical climate scenarios	RCP 4.5	Other, please specify (Diverse set of 50 sites globally to represent Boeing company-wide, customer locations, supplier sites, and transportation infrastructure.)	<Not Applicable>	Physical risks were assessed using IPCC RCP 4.5 for 2030- and 2050-time horizons. The high-level physical risk analysis covers a subset of Boeing’s global portfolio of owned and third-party assets (e.g., belonging to key customers and suppliers) and some key infrastructure. The assessment included nine different vulnerability indicators (e.g., physical access to sites, water supply) for seven types of activities (e.g., fabrication, data processing) across the assessed assets. Physical risks included numerous potential effects of temperature, water, humidity, wind, flooding, and extreme weather events. The project qualitatively assessed consequence of physical risks but not likelihood, which is ultimately mitigated by Boeing’s business continuity plans. Boeing is currently evaluating the results and next steps.
Physical climate scenarios	RCP 4.5				
<table border="1"> <tr> <td>Physical climate scenarios</td> <td>RCP 8.5</td> </tr> </table>	Physical climate scenarios	RCP 8.5	Other, please specify (Diverse set of 50 sites globally to represent Boeing company-wide, customer locations, supplier sites, and transportation infrastructure.)	<Not Applicable>	Physical risks were assessed using IPCC RCP 8.5 for 2030- and 2050-time horizons. RCP 8.5 generally introduces the stronger risks and thus the upper boundary for the assessment (as compared to 4.5). The high-level physical risk analysis covers a subset of Boeing’s global portfolio of owned and third-party assets (e.g., belonging to key customers and suppliers) and some key infrastructure. The assessment included nine different vulnerability indicators (e.g., physical access to sites, water supply) for seven types of activities (e.g., fabrication, data processing) across the assessed assets. Physical risks included numerous potential effects of temperature, water, humidity, wind, flooding, and extreme weather events. The project qualitatively assessed consequence of physical risks but not likelihood, which is ultimately mitigated by Boeing’s business continuity plans. Boeing is currently evaluating the results and next steps.
Physical climate scenarios	RCP 8.5				

C3.2b

(C3.2b) Provide details of the focal questions your organization seeks to address by using climate-related scenario analysis, and summarize the results with respect to these questions.

Row 1

Focal questions

1. How could climate-related physical and transition risks and opportunities plausibly affect our company?
2. How could these risks and opportunities affect our company in the short, medium, long term?
3. What scenarios should be used based on relevancy to Boeing and its value chain?

Results of the climate-related scenario analysis with respect to the focal questions

The work led us to focus on the above-referenced transition risk scenario (see C3.2a), for 2030 and 2050. Higher transition risks are associated with aggressive global mitigation actions to reduce emissions and no significant changes to current physical risks. On the other hand, with a global failure to transition to a low-carbon economy, pathways are likely to lead to a potentially significant increase in physical risks and adaptation risk. For these risks, as noted in C3.2a, the work led us to select RCP4.5 and RCP8.5 for the present day, 2030, and 2050.

The climate scenario analysis included 50 crucial sites across nine countries, comprising Boeing operations, suppliers, customers, and infrastructure. For the physical assessment, the locations were further divided into activity types, recognizing, for example, that airfield activity could be differently affected by a wind storm than part storage at the same site. Nine different vulnerability indicators were used to assess potential risks to people, facilities, and operations. Six broad categories of physical hazards were subdivided into 43 specific potential hazard conditions. This physical risk assessment created an understanding of the site-level risk and hazard data specific to each activity type. Consultants prepared a heatmap to indicate which sites and activities are most likely to be affected by the included risks, and how those effects change over time, if Boeing's mitigation efforts did not address them. This science-based, qualitative comparison is a first step in a tiered risk management approach to identify risks relative to all assets and activities across the portfolio. In addition to the ports and railways that were included in the infrastructure analysis, we also considered the effects of climate change on the operation of aircraft broadly. For the transition risk assessment, we considered policy and legal matters, market considerations, reputational factors, and technology topics.

C3.3

(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	<p>Our industry and our company are facing into climate change driven risks, opportunities and the need to decarbonize aerospace for sustained long-term growth.</p> <p>Our purpose is to protect, connect and explore our world and beyond safely and sustainably, so we're partnering across the aerospace community to reimagine and ultimately decarbonize aerospace in the second half of this century. By 2050, we hope see a world where air travel will safely carry 10 billion passengers a year; support 180 million jobs; support science, technology, engineering and math education; and generate nearly \$9 trillion in economic activity, all while minimizing the impact on our planet. At the same time, governments around the globe are committing to bold climate change ambitions and are looking to our industry to partner with them on a more sustainable aerospace future both in the commercial and defense sectors. This future requires a portfolio of solutions and partnerships allowing aerospace to decarbonize while ensuring the human connectivity, societal and economic benefits that will come when aerospace is available to people everywhere.</p> <p>We have made solid progress in areas where we see the biggest potential, including fleet renewal, network operational efficiencies, renewable energy transition, and advanced technology in power systems and platforms.</p>
Supply chain and/or value chain	Yes	<p>We included several crucial supplier and customer locations in our physical risk assessment under climate scenario analysis. In addition, we included important transportation infrastructure in this analysis. Locations were selected based on criticality or based on climate-related risks in the present day. This analysis can enable us to work with value chain partners on mitigating the identified risks. Additional evaluation and collection of emissions data are underway as well.</p>
Investment in R&D	Yes	<p>Boeing remains committed to pioneering sustainable aerospace for current and future generations. This involves a long history of innovative solutions with our people and partnerships foundational to all we do. This research is instrumental in decarbonizing aerospace and ranges from sustainable aviation fuel investments to network efficiencies to sustainable manufacturing operations. The ecoDemonstrator program in 2021 included several climate-related and fuel-reduction projects: NOAA GHG measurements, recycled carbon fiber cabin sidewalls, and efficient flying. In addition, all test flights use sustainable aviation fuel to reduce lifecycle CO2 emissions. Boeing and its industry and government partners have invested to accelerate innovation by taking promising technologies out of the lab and testing them in the air to solve real world challenges for airlines, passengers and the environment. In January 2021, Boeing established a goal that current and future commercial aircraft will be 100% SAF capable by 2030. This procurement further demonstrates Boeing's commitment to SAF as a viable aviation industry decarbonization solution.</p>
Operations	Yes	<p>Boeing will continue to face climate-related risks from events such as wildfires, hurricanes, extreme heat, and tornadoes. The unpredictable seasons drive our preparedness functions to maintain our all hazards approach to Business Continuity Management. Boeing works to reduce the impact of threats and vulnerabilities through strategic planning, risk assessments, employee training, and scenario-based exercises. Additionally, strategic recovery plans are developed, tested, and maintained annually, including issue-specific plans such as hot weather plans to keep employees and contractors safe. Each company location has a site emergency preparedness plan & follows standardized emergency procedures, aided by regularly testing emergency notification systems. The Global Security Operations Center (GSOC) provides 24/7 monitoring and situational awareness of global events. The purpose of these activities is to ensure that Boeing maintains a constant state of readiness to act when an incident begins. By taking a proactive approach, Boeing reduces the severity of impacts, minimizes disruptions, and improves its ability to recover and resume operations.</p> <p>For our operations, climate-related risks and our company goals have also influenced our energy portfolio—to provide energy security and to reduce net emissions. Boeing has invested and continues to invest in renewable electricity for our operational sites, entering into long-term renewable electricity supply contracts that will reduce manufacturing GHG net emissions.</p>

C3.4

(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Revenues Indirect costs	<p>The development and expansion of low emission goods and services represents an opportunity for increased revenues through access to new and emerging markets. We believe the next generation of aircraft will incorporate the latest airframe, propulsion and systems technology, as well as additional power and energy solutions for some different market segments and aircraft sizes. Boeing has been partnering across the industry on concepts for advanced aircraft that can meet specific energy efficiency, environmental and operational goals in 2030 and beyond. For example, our Transonic Truss-Braced Wing (TTBW) concept, provides a 9% improvement in fuel burn when compared to a cantilevered wing of the same technology level. Other projects are aimed at electric propulsion maturation of various types. Our work in electric aviation and power systems is advancing in our joint venture Wisk, which is working to develop, test and certify battery-electric vehicles and their safe, autonomous deployment in the airspace. For example, Cora, a two passenger eVTOL air taxi that we're developing with Wisk has flown more than 1,500 successful test flights since 2017. Boeing has researched hydrogen, green hydrogen and fuel cell applications for over 15 years, including five demonstration projects and significant space-based experiences. The insights gained through our flight demonstration programs with hydrogen fuel cells and combustion engines are informing future studies on scaled systems, configurations and infrastructure. To accelerate innovation, we also use our ecoDemonstrator flying test bed program to take promising technologies out of the lab and test them in the air. The ecoDemonstrator has tested over 170 projects on seven airplanes to date, including the advanced technology winglets that save fuel, a laser system that can detect clear air turbulence and landing gear that lessens noise.</p> <p>Use of more efficient production and distribution processes represents an opportunity to reduce indirect (operating) costs. We know sustainable aerospace starts inside our four walls. We are focused on continual improvements in pursuit of the sustainable product life cycle. We have continued to invest in conservation best practices, including efforts to replicate best practices in the aviation industry, beyond our own operations. We have dedicated staff focused on capitalizing on employee engagement and on implementing new ideas and events to drive positive behavioral change every day.</p>

C3.5

(C3.5) In your organization's financial accounting, do you identify spending/revenue that is aligned with your organization's climate transition?

	Identification of spending/revenue that is aligned with your organization's climate transition	Indicate the level at which you identify the alignment of your spending/revenue with a sustainable finance taxonomy
Row 1	No, and we do not plan to in the next two years	<Not Applicable>

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

Absolute target

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number

Abs 1

Is this a science-based target?

No, but we anticipate setting one in the next two years

Target ambition

<Not Applicable>

Year target was set

2018

Target coverage

Company-wide

Scope(s)

Scope 1

Scope 2

Scope 2 accounting method

Market-based

Scope 3 category(ies)

<Not Applicable>

Base year

2017

Base year Scope 1 emissions covered by target (metric tons CO2e)

324000

Base year Scope 2 emissions covered by target (metric tons CO2e)

526000

Base year Scope 3, Category 1: Purchased goods and services emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 2: Capital goods emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 4: Upstream transportation and distribution emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 5: Waste generated in operations emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 6: Business travel emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 7: Employee commuting emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 8: Upstream leased assets emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 10: Processing of sold products emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 11: Use of sold products emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 13: Downstream leased assets emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 14: Franchises emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 15: Investments emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Other (upstream) emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Other (downstream) emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year total Scope 3 emissions covered by target (metric tons CO2e)

<Not Applicable>

Total base year emissions covered by target in all selected Scopes (metric tons CO2e)

850000

Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1

51.061

Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2

86.371

Base year Scope 3, Category 1: Purchased goods and services emissions covered by target as % of total base year emissions in Scope 3, Category 1:

Purchased goods and services (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 2: Capital goods emissions covered by target as % of total base year emissions in Scope 3, Category 2: Capital goods (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target as % of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 4: Upstream transportation and distribution covered by target as % of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 5: Waste generated in operations emissions covered by target as % of total base year emissions in Scope 3, Category 5: Waste generated in operations (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 6: Business travel emissions covered by target as % of total base year emissions in Scope 3, Category 6: Business travel (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 7: Employee commuting covered by target as % of total base year emissions in Scope 3, Category 7: Employee commuting (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 8: Upstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 8: Upstream leased assets (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target as % of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 10: Processing of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 10: Processing of sold products (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 11: Use of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 11: Use of sold products (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 13: Downstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 13: Downstream leased assets (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 14: Franchises emissions covered by target as % of total base year emissions in Scope 3, Category 14: Franchises (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 15: Investments emissions covered by target as % of total base year emissions in Scope 3, Category 15: Investments (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Other (upstream) emissions covered by target as % of total base year emissions in Scope 3, Other (upstream) (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Other (downstream) emissions covered by target as % of total base year emissions in Scope 3, Other (downstream) (metric tons CO2e)

<Not Applicable>

Base year total Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)

<Not Applicable>

Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes

68.361

Target year

2025

Targeted reduction from base year (%)

25

Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]

637500

Scope 1 emissions in reporting year covered by target (metric tons CO2e)

294000

Scope 2 emissions in reporting year covered by target (metric tons CO2e)

293000

Scope 3, Category 1: Purchased goods and services emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 2: Capital goods emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 4: Upstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 5: Waste generated in operations emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 6: Business travel emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 7: Employee commuting emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 8: Upstream leased assets emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 9: Downstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 10: Processing of sold products emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 11: Use of sold products emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 12: End-of-life treatment of sold products emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 13: Downstream leased assets emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 14: Franchises emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 15: Investments emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Other (upstream) emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Other (downstream) emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Total Scope 3 emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)

587000

Does this target cover any land-related emissions?

Yes, it covers land-related CO2 emissions/removals associated with bioenergy and non-land related emissions (e.g. non-FLAG SBT with bioenergy)

% of target achieved relative to base year [auto-calculated]

123.764705882353

Target status in reporting year

Underway

Please explain target coverage and identify any exclusions

The 25 percent GHG target as compared to 2017 baseline target is set based on the emissions from Natural Gas and Electricity usage from Core Metric Sites, which represent the majority (>70%) of Boeing's operations. This target was developed using SBTi Sector-based approach.

Plan for achieving target, and progress made to the end of the reporting year

- Increase usage of renewably-sourced electricity and Renewable Energy Credits. - Increase usage of Sustainable Aviation Fuel. - Start phasing out of gasoline /diesel powered vehicles. - Electricity and Natural Gas conservation projects implemented at manufacturing sites. For 2022: GHG emissions were 8% lower than anticipated for the year. Procurement of renewable energy and renewable energy credits, low commercial production activity and infrastructure investments contributed to reduction in emissions from the operational footprint. The implementation of long-lasting infrastructure improvements and the contracting of renewable energy allow us to build on emissions reductions each year.

List the emissions reduction initiatives which contributed most to achieving this target

<Not Applicable>

Target reference number

Abs 2

Is this a science-based target?

No, but we anticipate setting one in the next two years

Target ambition

<Not Applicable>

Year target was set

2018

Target coverage

Company-wide

Scope(s)

Scope 1

Scope 2

Scope 2 accounting method

Market-based

Scope 3 category(ies)

<Not Applicable>

Base year

2017

Base year Scope 1 emissions covered by target (metric tons CO2e)

634000

Base year Scope 2 emissions covered by target (metric tons CO2e)

609000

Base year Scope 3, Category 1: Purchased goods and services emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 2: Capital goods emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 4: Upstream transportation and distribution emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 5: Waste generated in operations emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 6: Business travel emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 7: Employee commuting emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 8: Upstream leased assets emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 10: Processing of sold products emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 11: Use of sold products emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 13: Downstream leased assets emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 14: Franchises emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 15: Investments emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Other (upstream) emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Other (downstream) emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year total Scope 3 emissions covered by target (metric tons CO2e)
<Not Applicable>

Total base year emissions covered by target in all selected Scopes (metric tons CO2e)
1243000

Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1
100

Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2
100

Base year Scope 3, Category 1: Purchased goods and services emissions covered by target as % of total base year emissions in Scope 3, Category 1: Purchased goods and services (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 2: Capital goods emissions covered by target as % of total base year emissions in Scope 3, Category 2: Capital goods (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target as % of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 4: Upstream transportation and distribution covered by target as % of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 5: Waste generated in operations emissions covered by target as % of total base year emissions in Scope 3, Category 5: Waste generated in operations (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 6: Business travel emissions covered by target as % of total base year emissions in Scope 3, Category 6: Business travel (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 7: Employee commuting covered by target as % of total base year emissions in Scope 3, Category 7: Employee commuting (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 8: Upstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 8: Upstream leased assets (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target as % of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 10: Processing of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 10: Processing of sold products (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 11: Use of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 11: Use of sold products (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 13: Downstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 13: Downstream leased assets (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 14: Franchises emissions covered by target as % of total base year emissions in Scope 3, Category 14: Franchises (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 15: Investments emissions covered by target as % of total base year emissions in Scope 3, Category 15: Investments (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Other (upstream) emissions covered by target as % of total base year emissions in Scope 3, Other (upstream) (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Other (downstream) emissions covered by target as % of total base year emissions in Scope 3, Other (downstream) (metric tons CO2e)

<Not Applicable>

Base year total Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)

<Not Applicable>

Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes

100

Target year

2030

Targeted reduction from base year (%)

55

Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]

559350

Scope 1 emissions in reporting year covered by target (metric tons CO2e)

642000

Scope 2 emissions in reporting year covered by target (metric tons CO2e)

401000

Scope 3, Category 1: Purchased goods and services emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 2: Capital goods emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 4: Upstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 5: Waste generated in operations emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 6: Business travel emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 7: Employee commuting emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 8: Upstream leased assets emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 9: Downstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 10: Processing of sold products emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 11: Use of sold products emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 12: End-of-life treatment of sold products emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 13: Downstream leased assets emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 14: Franchises emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Category 15: Investments emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Other (upstream) emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3, Other (downstream) emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Total Scope 3 emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)

1043000

Does this target cover any land-related emissions?

Yes, it covers land-related CO2 emissions/removals associated with bioenergy and non-land related emissions (e.g. non-FLAG SBT with bioenergy)

% of target achieved relative to base year [auto-calculated]

29.2547356103269

Target status in reporting year

Underway

Please explain target coverage and identify any exclusions

The 55 percent GHG target is set for all sites under Boeing's Operational Control, accounting for >95 percent of Boeing's global Scope 1 and 2 GHG emissions inventory. This target was developed using SBTi Sector-based guidance in effect at the time we set our targets.

Plan for achieving target, and progress made to the end of the reporting year

- Increase usage of renewably-sourced electricity and Renewable Energy Credits. - Increase usage of Sustainable Aviation Fuel. - Start phasing out of gasoline /diesel powered vehicles. - Implement Electricity and Natural Gas conservation projects including a dedicated capital investment program in energy reduction at manufacturing sites.

List the emissions reduction initiatives which contributed most to achieving this target

<Not Applicable>

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?

Other climate-related target(s)

C4.2b

(C4.2b) Provide details of any other climate-related targets, including methane reduction targets.

Target reference number

Oth 1

Year target was set

2018

Target coverage

Company-wide

Target type: absolute or intensity

Absolute

Target type: category & Metric (target numerator if reporting an intensity target)

Energy consumption or efficiency	million Btu
----------------------------------	-------------

Target denominator (intensity targets only)

<Not Applicable>

Base year

2017

Figure or percentage in base year

13321000

Target year

2025

Figure or percentage in target year

11988900

Figure or percentage in reporting year

11799000

% of target achieved relative to base year [auto-calculated]

114.255686510022

Target status in reporting year

Underway

Is this target part of an emissions target?

Yes, this 10% energy reduction target is related to our GHG reduction target (Abs 1).

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain target coverage and identify any exclusions

The 10 percent energy reduction target is set for the Natural Gas and Electricity usage from the large majority of Boeing's manufacturing facility operations, accounting for over 90 percent of Boeing's global facility Natural Gas and Electricity use since 2017, based on sites within Boeing's Operational Control.

Plan for achieving target, and progress made to the end of the reporting year

- Increase usage of renewably-sourced electricity and Renewable Energy Credits. - Electricity and Natural Gas conservation projects implemented at manufacturing sites. For 2022: Energy consumption was 6% lower than anticipated for the year due to the impact of conservation initiatives, infrastructure investments, remote work and reduced production activity

List the actions which contributed most to achieving this target

<Not Applicable>

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	0	
To be implemented*	0	
Implementation commenced*	0	
Implemented*	5	1190
Not to be implemented	0	

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative category & Initiative type

Energy efficiency in buildings	Heating, Ventilation and Air Conditioning (HVAC)
--------------------------------	--

Estimated annual CO2e savings (metric tonnes CO2e)

450

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

165000

Investment required (unit currency – as specified in C0.4)

375000

Payback period

1-3 years

Estimated lifetime of the initiative

11-15 years

Comment

Emissions savings rounded to the nearest 10's. Monetary values rounded to nearest 1000's.

Initiative category & Initiative type

Energy efficiency in buildings	Heating, Ventilation and Air Conditioning (HVAC)
--------------------------------	--

Estimated annual CO2e savings (metric tonnes CO2e)

350

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 2 (location-based)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

218000

Investment required (unit currency – as specified in C0.4)

155000

Payback period

1-3 years

Estimated lifetime of the initiative

3-5 years

Comment

Emissions savings rounded to the nearest 10's. Monetary values rounded to nearest 1000's.

Initiative category & Initiative type

Energy efficiency in buildings	Building Energy Management Systems (BEMS)
--------------------------------	---

Estimated annual CO2e savings (metric tonnes CO2e)

200

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 2 (location-based)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

90000

Investment required (unit currency – as specified in C0.4)

191000

Payback period

1-3 years

Estimated lifetime of the initiative

11-15 years

Comment

Emissions savings rounded to the nearest 10's. Monetary values rounded to nearest 1000's.

Initiative category & Initiative type

Energy efficiency in buildings	Building Energy Management Systems (BEMS)
--------------------------------	---

Estimated annual CO2e savings (metric tonnes CO2e)

140

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 2 (location-based)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

63000

Investment required (unit currency – as specified in C0.4)

195000

Payback period

1-3 years

Estimated lifetime of the initiative

11-15 years

Comment

Emissions savings rounded to the nearest 10's. Monetary values rounded to nearest 1000's.

Initiative category & Initiative type

Energy efficiency in buildings	Lighting
--------------------------------	----------

Estimated annual CO2e savings (metric tonnes CO2e)

50

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 2 (location-based)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

297000

Investment required (unit currency – as specified in C0.4)

3109000

Payback period

4-10 years

Estimated lifetime of the initiative

21-30 years

Comment

Emissions savings rounded to the nearest 10's. Monetary values rounded to nearest 1000's.

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Other (Conservation Projects)	Conservation projects are being tracked and there is a planning process in place for sites to evaluate potential projects and the timing of investment in conservation projects. This includes engineering studies to evaluate energy efficiency capital projects that could be implemented in the future. We have achieved additional energy benefits, although not specifically quantified, through sustaining maintenance activities and new construction or major building refurbishment projects.
Dedicated budget for low-carbon product R&D	<p>Fuel efficiency and CO2 emissions reduction, is the driving technology force in our industry. For this reason, a substantial portion of our research and product development budget for commercial airplanes is directed towards lower-carbon emitting products. New commercial airplanes provide significant efficiency gains, with each generation reducing fuel use and emissions. Boeing has invested more than \$60 billion over the last 10 years in key strategic areas. To accelerate innovation, we also use our ecoDemonstrator flying test bed program to take promising technologies out of the lab and test them in the air and on the ground. The ecoDemonstrator has tested over 170 projects to date, including the advanced technology winglets that save fuel, a laser system that can detect clear air turbulence and landing gear that lessens noise.</p> <p>The Boeing ecoDemonstrator program takes promising technologies out of the lab and tests them to make flying safer and more sustainable. The ecoDemonstrator program has evaluated technologies using a 737 (2012), 787 Dreamliner (2014), 757 (2015), an Embraer E170 regional jet (2016, and the first such collaboration between two airplane manufacturers), a 777 Freighter (2018), a 777-200 (2019), and a 787-10 Dreamliner (2020). About one-third of the technologies tested on these flight test programs have transitioned to either production programs or in-service solutions for customers. For example, natural laminar flow winglets that improved fuel efficiency during testing in 2012 with the 737 are now standard equipment on the 737MAX. The 2018 777 ecoDemonstrator platform tested technology allowing it to fly on sustainable aviation fuel throughout the entirety of the flight test program, which helped lead to the first-ever commercial flights on 100% sustainable aviation fuel.</p> <p>The 2022 ecoDemonstrator is a Boeing-owned 777-200ER tested about 30 projects that can make aviation safer and more sustainable. Projects included technologies that improve sustainability and safety for the aerospace industry, including a water conservation system and technologies to improve operational efficiency. Other projects focus on product lifecycle, additive manufacturing, and sustainable aviation fuel.</p>
Dedicated budget for other emissions reduction activities	<p>Boeing is committed to environmental protection and stewardship at all levels – conducting its operations in compliance with applicable environmental laws, regulations, and internal policies and procedures. Along with Boeing nonprofit environmental partners and other stakeholders, the company is working together on activities that promote environmental protection and stewardship toward the goals of improving the quality and sustainability of our global water supply, preserving and restoring ecosystems and protect wildlife. Boeing corporate charitable investments are amplified by employee giving. In 2022, Boeing employees donated more than \$63 million, which includes the Boeing company match, and contributed 366,000 volunteer hours to charitable causes. Boeing also encouraged virtual volunteering for employees during the pandemic, including, Zooniverse — the largest platform for people-powered research where over a million volunteers assist professional researchers to amplify their biodiversity, and other work, to advance science and the humanities. In 2022, 186 employees volunteered 420 hours through Zooniverse, spotting and identifying animals, and generating thousands of dollars in gift-matching by Boeing's gift-match program.</p> <p>As part of our commitment to sustainability — with a focus on environmental stewardship and biodiversity — Boeing donated \$1 million to the National Wildlife Federation in February 2022 for the Wallis Annenberg Wildlife Crossing in Los Angeles. The crossing, with ceremonial groundbreaking in April 2022, will span 10 lanes of U.S. Highway 101 to reconnect an integral wildlife zone near Boeing's Santa Susana Field Laboratory. The wildlife crossing will be critical in the effort to save the threatened local mountain lion population from extinction. Boeing has a history of partnership with the National Wildlife Federation, including donations for the wildlife crossing campaign, a long-term mountain lion study in the Santa Monica Mountains and educational outreach.</p>
Employee engagement	Active engagement of employees is a critical component of improving the environmental performance of Boeing operations; doing this well requires unique approaches at different sites and with different groups of employees. Boeing's employee engagement program focuses on identifying and removing barriers that prevent employees from adopting sustainable behaviors. This is done through deploying employee-based social marketing techniques and by providing tools to help employees save energy and water and reduce waste. Resources are centrally available and include a website; social networking site; conservation and behavior change communities of practice; playbooks for best practices; gamification; hands-on learning kits; communications; environment tips and training. One of the highlights of this program is Boeing's annual Battle of the Buildings Competition (BoB), which is the key recognition of Earth Day at Boeing Operations. Through BoB, Boeing leverages the gamification of conservation to engage employees to change behaviors and reduce energy use and greenhouse gas emissions – whether they're working at a Boeing site or at home.
Internal incentives/recognition programs	Boeing sponsors an annual internal Environmental Leadership Awards program to recognize and encourage replication of environmental and conservation best practices worldwide across the company. The award also recognizes innovative ideas and proactive efforts to implement measures to benefit the environment.
Lower return on investment (ROI) specification	In 2019, Boeing also joined the Renewable Energy Buyer's Alliance and entered into contracts to expand our use of 100% renewable electricity. In 2021, Boeing procured enough renewable electricity to account for the electricity used in our factories in Renton, Washington and Charleston, South Carolina; most sites in Illinois, Indiana, Ohio, Pennsylvania, Texas, and the UK; and a large data center in Arizona.
Other (ENERGY STAR)	Boeing has been an EPA Energy Star Partner of the Year every year since 2010, receiving a Sustained Excellence Award for maintaining its energy management program in 2022.
Compliance with regulatory requirements/standards	Through collaboration with global stakeholders over several years, Boeing supported development and adoption of two complementary global carbon emission–reduction measures agreed to in 2016 by ICAO: a fuel efficiency standard for newly manufactured airplanes and a market-based carbon-offset program known as CORSIA. New commercial aircraft will be required to meet ICAO's fuel efficiency standards as they are implemented by member nations over the next several years. And airlines flying between participating nations will begin adopting a market-based carbon-offset program, CORSIA. Over 100 states now participate in CORSIA, covering approximately 80 percent of the estimated growth in emissions from international aviation after 2020. Offset credits purchased through the program, which will be assessed to ensure they meet stringent environmental integrity criteria, will finance projects to reduce CO2 emissions, many in developing countries. In 2020, we advocated for US adoption of the ICAO standards. Boeing also voluntarily participated in the US Federal Aviation Administration's (FAA) initial CORSIA data request in 2022.
Other (Sustainable Aviation Fuel Activities)	<p>Boeing continues to be a leader in the aviation industry for developing and commercializing sustainable aviation fuels (SAF). Sustainable aviation fuels represent commercial aviation's greatest opportunity to reduce CO2 emissions, meet the aerospace industry's environmental goals, and support long-term sustainable growth. Substantial progress has been made on dozens of collaborative projects around the world with near- and long-term potential to deliver sustainable aviation fuel to airline customers. In January 2021, Boeing established a goal that current and future commercial aircraft will be 100% SAF capable by 2030. In 2021 Boeing, SkyNRG, and SkyNRG Americas announced a partnership focused on scaling the availability and use of sustainable aviation fuels (SAF) globally. Boeing will also invest in SkyNRG Americas' SAF production project, for which Alaska Airlines is a previously announced partner. Boeing's 2018 ecoDemonstrator 777 Freighter made history as the world's first commercial airliner to fly on 100% sustainable fuel. The 2022 ecoDemonstrator program operated test flights on ~30% SAF. Please note accomplishments we've included in our 2023 Sustainability report that reflects 2022 activities, which includes but is not limited to:</p> <ul style="list-style-type: none"> January – Wisk secured \$450 million from Boeing to advance certified autonomous electric flight February - Purchased 2 million gallons (7.6 million liters) of SAF for Boeing's commercial airplane operations April - Announced multiyear commitment to Yale Center for Natural Carbon Capture June - Unveiled 2022 ecoDemonstrator, a 777-200ER serving as a test bed for 30 new technologies to help decarbonize aviation July - Debuted Cascade, a data modeling tool that visualizes how to get to a net-zero carbon emission future for commercial aviation October - ecoDemonstrator program collaborated with NASA to test SAF emissions

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products.

Level of aggregation

Group of products or services

Taxonomy used to classify product(s) or service(s) as low-carbon

Other, please specify (Standard airplane performance analysis tools)

Type of product(s) or service(s)

Aviation	Other, please specify (Commercial Aircraft, new lower-carbon versions)
----------	--

Description of product(s) or service(s)

737MAX, 787, and 777X families of airplane products. 737MAX and 787 are currently in-production and available for order and delivery to replace the prior generation of similar airplanes. 777X is currently in development and available for order to replace the prior generations of 777, 747, A340, and A380 airplanes to reduce CO2 emissions in support of commercial aviation goal of net zero emissions by 2050.

Each new generation of aircraft improves upon the prior generation of similar aircraft by 15 to 25 percent. For example, the 737MAX generation of our aircraft has 20 percent less CO2 emissions per passenger kilometre than the 737NG generation of aircraft; and the 787 aircraft has 25 percent less CO2 emissions per passenger kilometre than the 767-300ER. Per ASTM standards, all commercial turbojet airplanes are certified to fly revenue passengers with a blend of up to 50% sustainable aviation fuels derived from biomass and other sustainable sources that can reduce CO2 emissions by up to 80% over conventional fossil jet fuel on a life cycle basis. Boeing Commercial Airplanes 2022 revenues were \$25,867 million USD and are listed in our Annual Report, Page 22.

Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

No

Methodology used to calculate avoided emissions

<Not Applicable>

Life cycle stage(s) covered for the low-carbon product(s) or services(s)

<Not Applicable>

Functional unit used

<Not Applicable>

Reference product/service or baseline scenario used

<Not Applicable>

Life cycle stage(s) covered for the reference product/service or baseline scenario

<Not Applicable>

Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

<Not Applicable>

Explain your calculation of avoided emissions, including any assumptions

<Not Applicable>

Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

61

C5. Emissions methodology

C5.1

(C5.1) Is this your first year of reporting emissions data to CDP?

No

C5.1a

(C5.1a) Has your organization undergone any structural changes in the reporting year, or are any previous structural changes being accounted for in this disclosure of emissions data?

Row 1

Has there been a structural change?

No

Name of organization(s) acquired, divested from, or merged with

<Not Applicable>

Details of structural change(s), including completion dates

<Not Applicable>

C5.1b

(C5.1b) Has your emissions accounting methodology, boundary, and/or reporting year definition changed in the reporting year?

	Change(s) in methodology, boundary, and/or reporting year definition?	Details of methodology, boundary, and/or reporting year definition change(s)
Row 1	No, but we have discovered significant errors in our previous response(s)	<Not Applicable>

C5.1c

(C5.1c) Have your organization's base year emissions and past years' emissions been recalculated as a result of any changes or errors reported in C5.1a and/or C5.1b?

	Base year recalculation	Scope(s) recalculated	Base year emissions recalculation policy, including significance threshold	Past years' recalculation
Row 1	No, because the impact does not meet our significance threshold	<Not Applicable>	We adhere to ISO14064 for our GHG Inventory and reporting methodology. Any change to our emissions reporting greater than 5% results in a recalculation.	No

C5.2

(C5.2) Provide your base year and base year emissions.

Scope 1

Base year start

January 1 2017

Base year end

December 31 2017

Base year emissions (metric tons CO2e)

634000

Comment

Verified via third party to level of Limited Assurance.

Scope 2 (location-based)

Base year start

January 1 2017

Base year end

December 31 2017

Base year emissions (metric tons CO2e)

886000

Comment

Verified via third party to level of Limited Assurance.

Scope 2 (market-based)

Base year start

January 1 2017

Base year end

December 31 2017

Base year emissions (metric tons CO2e)

609000

Comment

Verified via third party to level of Limited Assurance.

Scope 3 category 1: Purchased goods and services

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 2: Capital goods

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 3: Fuel-and-energy-related activities (not included in Scope 1 or 2)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 4: Upstream transportation and distribution

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 5: Waste generated in operations

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 6: Business travel

Base year start

January 1 2017

Base year end

December 31 2017

Base year emissions (metric tons CO2e)

285000

Comment

Verified via third party to level of Limited Assurance.

Scope 3 category 7: Employee commuting

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 8: Upstream leased assets

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 9: Downstream transportation and distribution

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 10: Processing of sold products

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 11: Use of sold products

Base year start

January 1 2017

Base year end

December 31 2017

Base year emissions (metric tons CO2e)

758000000

Comment

Verified via third party to level of Limited Assurance.

Scope 3 category 12: End of life treatment of sold products

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 13: Downstream leased assets

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 14: Franchises

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 15: Investments

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3: Other (upstream)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3: Other (downstream)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

C5.3

(C5.3) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

Australia - National Greenhouse and Energy Reporting Act

European Union Emission Trading System (EU ETS): The Monitoring and Reporting Regulation (MMR) – General guidance for installations

ISO 14064-1

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

The Greenhouse Gas Protocol: Scope 2 Guidance

The Greenhouse Gas Protocol: Corporate Value Chain (Scope 3) Standard

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)

642000

Start date

January 1 2022

End date

December 31 2022

Comment

Numbers are rounded to thousands.

Past year 1

Gross global Scope 1 emissions (metric tons CO2e)

612000

Start date

January 1 2021

End date

December 31 2021

Comment

Numbers are rounded to thousands.

Past year 2

Gross global Scope 1 emissions (metric tons CO2e)

Start date

End date

Comment

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We are reporting a Scope 2, market-based figure

Comment

Numbers are rounded to thousands.

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based

779000

Scope 2, market-based (if applicable)

401000

Start date

January 1 2022

End date

December 31 2022

Comment

Numbers are rounded to thousands.

Past year 1

Scope 2, location-based

756000

Scope 2, market-based (if applicable)

446000

Start date

January 1 2021

End date

December 31 2021

Comment

Numbers are rounded to thousands.

Past year 2

Scope 2, location-based

Scope 2, market-based (if applicable)

Start date

End date

Comment

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1, Scope 2 or Scope 3 emissions that are within your selected reporting boundary which are not included in your disclosure?

No

C6.5

(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

More than 11,000 Tier 1 suppliers, ranging from small- to large-size companies, work every day to help Boeing account for 3 million-plus parts on an airplane. Today, Boeing is more focused than ever on not only increasing collaboration and engagement with its suppliers, but also promoting robust environmental practices by our suppliers. Boeing is collaborating with other International Aerospace Environmental Group (IAEG) member companies in an effort to establish a common accounting methodology for the Purchased Goods and Services category for aerospace manufacturers. Applying the published IAEG guidance, Boeing estimated this category using the average spendbased estimating approach and determined this category is not relevant. Based on these criteria, GHG emissions associated with upstream leased assets is not relevant in comparison to Category 11 emissions (emissions for use of sold products).

Capital goods

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons CO₂e)

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

In 2022, we occupied approximately 83 million square feet of floor space for manufacturing, warehousing, engineering, administration and other productive uses, of which approximately 93 percent was located in the United States. Of that total, we owned approximately 60 million square feet of property in the US. Boeing is collaborating with other International Aerospace Environmental Group (IAEG) member companies in an effort to establish a common accounting methodology for the Capital Goods category for aerospace manufacturers. Applying the published IAEG guidance, Boeing estimated this category using the average spend-based estimating approach and determined this category is not relevant. (Square footages based on those included within our Operational Control, and thereby our Organizational Boundary.)

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons CO₂e)

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

Category is not relevant based on relevance assessment conducted by International Aerospace Environmental Group (IAEG). This assessment is based on the criteria defined in The GHG Protocol Corporate Value Chain Accounting and Reporting Standard, which includes size, influence, risk and stakeholders. Each Scope 3 category is scored numerically against each criterion to determine the relevancy of each Scope 3 category to the aerospace industry. Recognizing the diversity in aerospace products, IAEG Work Group 3 conducted the assessment at a sub-industry level. The aerospace sub-industries included in this assessment are final assembly, electrical components, software, engines, structural components, and interiors. Based on these criteria, GHG emissions associated with fuel and energy-related activities is not relevant.

Upstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons CO₂e)

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

More than 11,000 Tier 1 suppliers, ranging from small- to large-size companies, work every day to help Boeing account for 3 million-plus parts on an airplane. We have suppliers in every state in the U.S. and 48 countries. The complexity in our supply chain brings challenges to account for GHG emissions in this category. Applying the published IAEG guidance, Boeing estimated this category and determined that it is not relevant.

Waste generated in operations

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons CO₂e)

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

Category is not relevant based on relevance assessment conducted by International Aerospace Environmental Group (IAEG). This assessment is based on the criteria defined in The GHG Protocol Corporate Value Chain Accounting and Reporting Standard, which includes size, influence, risk and stakeholders. Each Scope 3 category is scored numerically against each criterion to determine the relevancy of each Scope 3 category to the aerospace industry. Recognizing the diversity in aerospace products, IAEG Work Group 3 conducted the assessment at a sub-industry level. The aerospace sub-industries included in this assessment are final assembly, electrical components, software, engines, structural components, and interiors. Based on these criteria, GHG emissions associated with upstream leased assets is not relevant.

Business travel

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

186000

Emissions calculation methodology

Fuel-based method

Distance-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Please explain

GHG emissions come from our employees' air travel and rental cars during business travel. Although after applying the published IAEG guidance, Boeing estimated this category and determined that it is not relevant, we have chosen to tabulate and include this value because Boeing currently offsets employee business travel (notably, this is beyond our stated goal of net zero Scope 1 and 2 GHG emissions). Methodologies for Scope 3 business travel were provided by WRI Mobile Combustion Calculation Tool Ver. 2.6. Purchased air travel emissions are based on the Distance Travelled Approach and do not include subsidiary holdings that are not fully integrated. Rental car emissions are calculated based on fuel usage estimation. Our calculations include the following assumptions: • All fuels are burned and other direct GHG are emitted in year purchased. • Scope 3 rental car emissions based on miles travelled and average fuel economy predicted for each car class as provided by rental car companies. Numbers are rounded to thousands.

Employee commuting

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

Boeing employs approximately 156,000 people worldwide, and this creates challenges for calculating GHG emissions in this category. Applying the published IAEG guidance, Boeing estimated this category and determined that it is not relevant.

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

Category is not relevant based on relevance assessment conducted by International Aerospace Environmental Group (IAEG). This assessment is based on the criteria defined in The GHG Protocol Corporate Value Chain Accounting and Reporting Standard, which includes size, influence, risk and stakeholders. Each Scope 3 category is scored numerically against each criterion to determine the relevancy of each Scope 3 category to the aerospace industry. Recognizing the diversity in aerospace products, IAEG Work Group 3 conducted the assessment at a sub-industry level. The aerospace sub-industries included in this assessment are final assembly, electrical components, software, engines, structural components, and interiors. Based on these criteria GHG emissions associated with upstream leased assets is not relevant.

Downstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

Because most of our customers take delivery of our aircraft products at our facilities or our delivery centers, emissions from this category are de minimis and not relevant.

Processing of sold products

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

Category is not relevant based on relevance assessment conducted by International Aerospace Environmental Group (IAEG). This assessment is based on the criteria defined in The GHG Protocol Corporate Value Chain Accounting and Reporting Standard, which includes size, influence, risk and stakeholders. Each Scope 3 category is scored numerically against each criterion to determine the relevancy of each Scope 3 category to the aerospace industry. Recognizing the diversity in aerospace products, IAEG Work Group 3 conducted the assessment at a sub-industry level. The aerospace sub-industries included in this assessment are final assembly, electrical components, software, engines, structural components, and interiors. Based on these criteria, GHG emissions associated with downstream leased assets is not relevant.

Use of sold products

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

385000000

Emissions calculation methodology

Methodology for direct use phase emissions, please specify
Methodology for indirect use phase emissions, please specify

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

Emission are estimated with methodology aligned with the Greenhouse Gas Protocol. Total CO2e output, based on CO2, CH4, and N2O over the estimated lifetime of our products including upstream fuel production is calculated based on the formula: (# of units produced in a year) x (emissions per year) x (average lifespan of the product) x (upstream fuel production factor). Assumptions include utilization and retirement age based on average of last 10 years of industry data, average retirement age of ~23 years across all commercial products. We also developed a methodology for calculating defense product emissions, based on service life and average fuel flow. Finally, we included upstream fuel production, which accounts for 13% of total emissions (whereas direct combustion is 87% of the total). Use of sold products emissions includes direct emissions from combustion of fuel (335,000,000 metric tons) and indirect emissions from production of fuel (50,000,000 metric tons). Numbers are rounded to nearest million metric tons.

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

Category is not relevant based on relevance assessment conducted by International Aerospace Environmental Group (IAEG). This assessment is based on the criteria defined in The GHG Protocol Corporate Value Chain Accounting and Reporting Standard, which includes size, influence, risk and stakeholders. Each Scope 3 category is scored numerically against each criterion to determine the relevancy of each Scope 3 category to the aerospace industry. Recognizing the diversity in aerospace products, IAEG Work Group 3 conducted the assessment at a sub-industry level. The aerospace sub-industries included in this assessment are final assembly, electrical components, software, engines, structural components, and interiors. GHG emissions associated with dismantling and recycling sold products after end of service life is not relevant.

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

Category is not relevant based on relevance assessment conducted by International Aerospace Environmental Group (IAEG). This assessment is based on the criteria defined in The GHG Protocol Corporate Value Chain Accounting and Reporting Standard, which includes size, influence, risk and stakeholders. Each Scope 3 category is scored numerically against each criterion to determine the relevancy of each Scope 3 category to the aerospace industry. Recognizing the diversity in aerospace products, IAEG Work Group 3 conducted the assessment at a sub-industry level. The aerospace sub-industries included in this assessment are final assembly, electrical components, software, engines, structural components, and interiors. Based on these criteria, GHG emissions associated with downstream leased assets is not relevant.

Franchises

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons CO₂e)

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

Category is not relevant based on relevance assessment conducted by International Aerospace Environmental Group (IAEG). This assessment is based on the criteria defined in The GHG Protocol Corporate Value Chain Accounting and Reporting Standard, which includes size, influence, risk and stakeholders. Each Scope 3 category is scored numerically against each criterion to determine the relevancy of each Scope 3 category to the aerospace industry. Recognizing the diversity in aerospace products, IAEG Work Group 3 conducted the assessment at a sub-industry level. The aerospace sub-industries included in this assessment are final assembly, electrical components, software, engines, structural components, and interiors. Based on these criteria, GHG emissions associated with franchises are not relevant.

Investments

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons CO₂e)

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

Category is not relevant based on relevance assessment conducted by International Aerospace Environmental Group (IAEG). This assessment is based on the criteria defined in The GHG Protocol Corporate Value Chain Accounting and Reporting Standard, which includes size, influence, risk and stakeholders. Each Scope 3 category is scored numerically against each criterion to determine the relevancy of each Scope 3 category to the aerospace industry. Recognizing the diversity in aerospace products, IAEG Work Group 3 conducted the assessment at a sub-industry level. The aerospace sub-industries included in this assessment are final assembly, electrical components, software, engines, structural components, and interiors. Based on these criteria, GHG emissions associated with investments is not relevant.

Other (upstream)

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons CO₂e)

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

Boeing has evaluated relevance of all fifteen Scope 3 categories defined by WRI.

Other (downstream)

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons CO₂e)

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

Boeing has evaluated relevance of all fifteen Scope 3 categories defined by WRI.

C6.5a

(C6.5a) Disclose or restate your Scope 3 emissions data for previous years.

Past year 1

Start date

January 1 2021

End date

December 31 2022

Scope 3: Purchased goods and services (metric tons CO2e)

Scope 3: Capital goods (metric tons CO2e)

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

Scope 3: Upstream transportation and distribution (metric tons CO2e)

Scope 3: Waste generated in operations (metric tons CO2e)

Scope 3: Business travel (metric tons CO2e)

88000

Scope 3: Employee commuting (metric tons CO2e)

Scope 3: Upstream leased assets (metric tons CO2e)

Scope 3: Downstream transportation and distribution (metric tons CO2e)

Scope 3: Processing of sold products (metric tons CO2e)

Scope 3: Use of sold products (metric tons CO2e)

Scope 3: End of life treatment of sold products (metric tons CO2e)

Scope 3: Downstream leased assets (metric tons CO2e)

Scope 3: Franchises (metric tons CO2e)

Scope 3: Investments (metric tons CO2e)

Scope 3: Other (upstream) (metric tons CO2e)

Scope 3: Other (downstream) (metric tons CO2e)

Comment

Business Travel updated due to an error found in the internal business travel reporting system. Re-stated Business Travel was re-verified by third party.

Past year 2

Start date

End date

Scope 3: Purchased goods and services (metric tons CO2e)

Scope 3: Capital goods (metric tons CO2e)

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

Scope 3: Upstream transportation and distribution (metric tons CO2e)

Scope 3: Waste generated in operations (metric tons CO2e)

Scope 3: Business travel (metric tons CO2e)

Scope 3: Employee commuting (metric tons CO2e)

Scope 3: Upstream leased assets (metric tons CO2e)

Scope 3: Downstream transportation and distribution (metric tons CO2e)

Scope 3: Processing of sold products (metric tons CO2e)

Scope 3: Use of sold products (metric tons CO2e)

Scope 3: End of life treatment of sold products (metric tons CO2e)

Scope 3: Downstream leased assets (metric tons CO2e)

Scope 3: Franchises (metric tons CO2e)

Scope 3: Investments (metric tons CO2e)

Scope 3: Other (upstream) (metric tons CO2e)

Scope 3: Other (downstream) (metric tons CO2e)

Comment

C6.7

(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?

Yes

C6.7a

(C6.7a) Provide the emissions from biogenic carbon relevant to your organization in metric tons CO2.

	CO2 emissions from biogenic carbon (metric tons CO2)	Comment
Row 1	0	Current process for SAF emissions relies on EFs that don't differentiate between CH4, N2O and CO2; only CO2e. So, we can't enter a number for Biogenic CO2 emissions.

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure

0.0000156588

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)

1043000

Metric denominator

unit total revenue

Metric denominator: Unit total

66608000000

Scope 2 figure used

Market-based

% change from previous year

8.5

Direction of change

Decreased

Reason(s) for change

Change in renewable energy consumption

Other emissions reduction activities

Change in revenue

Please explain

Numerator: Scope 1 + Scope 2 (Market) emissions were lower in 2022 as compared to 2021. This was largely due to increased usage of renewable energy. Since our baseline year of 2017, Boeing has increased our global renewable energy by 106%. Despite cold northwestern U.S. weather in December, energy continued to be under plan overall for the enterprise. Energy usage was down due to remote working conditions; reduced production activities; and conservation gains. Denominator: Boeing revenue was higher in 2022 than in 2021, per 2022 Annual Report. Revenues increased by \$4,322 million in 2022 compared with 2021 driven by higher revenues at BCA and BGS, partially offset by lower revenues at BDS. BCA revenues increased by \$6,374 million primarily driven by higher 737 and 787 deliveries. BGS revenues increased by \$1,283 million primarily due to higher commercial services volume, partially offset by lower government services volume and performance. BDS revenues decreased by \$3,378 million primarily due to charges on development programs, unfavorable performance across other defense programs, and lower P-8 and weapons volume. Revenues increased by \$4,128 million in 2021 compared with 2020 driven by higher revenues at BCA, BDS and BGS. BCA revenues increased by \$3,331 million primarily driven by higher 737 MAX deliveries due to recertification and return to service in most jurisdictions and the absence of \$498 million of 737 MAX customer considerations which reduced revenues in 2020, partially offset by lower 787 deliveries in 2021. BDS revenues increased by \$283 million primarily from higher revenue on the KC-46A Tanker program and lower charges in 2021. BGS revenues increased by \$785 million primarily due to higher commercial and government services volume. Revenues will continue to be significantly impacted until the global supply chain stabilizes, labor instability diminishes, and deliveries ramp up.

Intensity figure

0.0000156588

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)

1043000

Metric denominator

unit total revenue

Metric denominator: Unit total

66608000000

Scope 2 figure used

Market-based

% change from previous year

8.5

Direction of change

Decreased

Reason(s) for change

Change in renewable energy consumption

Other emissions reduction activities

Change in revenue

Please explain

Numerator: Scope 1 + Scope 2 (Market) emissions were lower in 2022 as compared to 2021. This was largely due to increased usage of renewable energy. Since our baseline year of 2017, Boeing has increased our global renewable energy by 106%. Despite cold northwestern U.S. weather in December, energy continued to be under plan overall for the enterprise. Energy usage was down due to remote working conditions; reduced production activities; and conservation gains. Denominator: Boeing revenue was higher in 2022 than in 2021, per 2022 Annual Report. Revenues increased by \$4,322 million in 2022 compared with 2021 driven by higher revenues at BCA and BGS, partially offset by lower revenues at BDS. BCA revenues increased by \$6,374 million primarily driven by higher 737 and 787 deliveries. BGS revenues increased by \$1,283 million primarily due to higher commercial services volume, partially offset by lower government services volume and performance. BDS revenues decreased by \$3,378 million primarily due to charges on development programs, unfavorable performance across other defense programs, and lower P-8 and weapons volume. Revenues increased by \$4,128 million in 2021 compared with 2020 driven by higher revenues at BCA, BDS and BGS. BCA revenues increased by \$3,331 million primarily driven by higher 737 MAX deliveries due to recertification and return to service in most jurisdictions and the absence of \$498 million of 737 MAX customer considerations which reduced revenues in 2020, partially offset by lower 787 deliveries in 2021. BDS revenues increased by \$283 million primarily from higher revenue on the KC-46A Tanker program and lower charges in 2021. BGS revenues increased by \$785 million primarily due to higher commercial and government services volume. Revenues will continue to be significantly impacted until the global supply chain stabilizes, labor instability diminishes, and deliveries ramp up.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?

Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	566000	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	1000	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	11000	IPCC Fourth Assessment Report (AR4 - 100 year)
HFCs	6000	IPCC Fourth Assessment Report (AR4 - 100 year)
SF6	56000	IPCC Fourth Assessment Report (AR4 - 100 year)
Other, please specify (HFEs)	2000	IPCC Fourth Assessment Report (AR4 - 100 year)

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/area/region.

Country/area/region	Scope 1 emissions (metric tons CO2e)
Americas <i>Emissions data are rounded to thousands.</i>	619000
Oceania <i>Emissions data are rounded to thousands.</i>	18000
Other, please specify (Asia) <i>Emissions data are rounded to thousands.</i>	2000
Europe <i>Emissions data are rounded to thousands.</i>	4000
Africa <i>Emissions data are rounded to thousands.</i>	0

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By business division

C7.3a

(C7.3a) Break down your total gross global Scope 1 emissions by business division.

Business division	Scope 1 emissions (metric ton CO2e)
Commercial Airplanes	396000
Defense, Space & Security	187000
Global Services	29000
Unallocated items and other	30000

C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

	Gross Scope 1 emissions, metric tons CO2e	Net Scope 1 emissions , metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Electric utility activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (midstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	584000	<Not Applicable>	This accounting method includes the emissions from the following business divisions: Commercial Airplanes, Defense, Space & Security.
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/area/region.

Country/area/region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Americas <i>data are rounded to thousands.</i>	713000	338000
Oceania <i>data are rounded to thousands.</i>	23000	23000
Other, please specify (Asia) <i>data are rounded to thousands.</i>	29000	29000
Europe <i>data are rounded to thousands.</i>	13000	10000
Africa <i>data are rounded to thousands.</i>	0	

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By business division

C7.6a

(C7.6a) Break down your total gross global Scope 2 emissions by business division.

Business division	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Commercial Airplanes	322000	80000
Defense, Space & Security	327000	239000
Global Services	49000	31000
Unallocated items and other	80000	51000

C7.7

(C7.7) Is your organization able to break down your emissions data for any of the subsidiaries included in your CDP response?

No

C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7

(C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7) Break down your organization's total gross global Scope 2 emissions by sector production activity in metric tons CO2e.

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (midstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	649000	319000	This accounting method includes the emissions from the following business divisions: Commercial Airplanes, Defense, Space & Security.
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C-TO7.8

(C-TO7.8) Provide primary intensity metrics that are appropriate to your indirect emissions in Scope 3 Category 11: Use of sold products from transport.

Activity

Aviation

Emissions intensity figure

Metric numerator (Scope 3 emissions: use of sold products) in Metric tons CO2e

Metric denominator

t.km

Metric denominator: Unit total

% change from previous year

Vehicle unit sales in reporting year

480

Vehicle lifetime in years

22.5

Annual distance in km or miles (unit specified by column 4)

Load factor

The 2022 industry average passenger load factor is 78.7 percent worldwide

Please explain the changes, and relevant standards/methodologies used

Typical median in-service lifetime for commercial freighter aircraft is 25-30, whereas the lifetime for commercial passenger aircraft is 20-25 years. The mean of the 20 to 25-year range for commercial passenger aircraft is entered into the Vehicle Lifetime in Years field. In 2021 Boeing delivered totally 324 commercial aircraft, which includes 737, 747, 767, 777 and 787 aircraft models. Note that commercial aircraft ranges and performance vary widely across Boeing's product offerings, which affects these averages. Only commercial aircraft sales are reported above. (Excludes 737-800's delivered to P8 program.)

Activity

Aviation

Emissions intensity figure

Metric numerator (Scope 3 emissions: use of sold products) in Metric tons CO2e

Metric denominator

t.km

Metric denominator: Unit total

% change from previous year

Vehicle unit sales in reporting year

480

Vehicle lifetime in years

22.5

Annual distance in km or miles (unit specified by column 4)

Load factor

The 2022 industry average passenger load factor is 78.7 percent worldwide

Please explain the changes, and relevant standards/methodologies used

Typical median in-service lifetime for commercial freighter aircraft is 25-30, whereas the lifetime for commercial passenger aircraft is 20-25 years. The mean of the 20 to 25-year range for commercial passenger aircraft is entered into the Vehicle Lifetime in Years field. In 2021 Boeing delivered totally 324 commercial aircraft, which includes 737, 747, 767, 777 and 787 aircraft models. Note that commercial aircraft ranges and performance vary widely across Boeing's product offerings, which affects these averages. Only commercial aircraft sales are reported above. (Excludes 737-800's delivered to P8 program.)

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change in emissions	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	46000	Decreased	4.3	Our reported total Scope 1 and Scope 2 (market) emissions for 2021 was 1,059,000 metric ton CO2e, therefore we arrived at 4.3% through $(46,000/1,059,000) * 100\% = 4.3\%$
Other emissions reduction activities	1200	Decreased	0.1	Last year, 1,190 metric ton CO2e were reduced by our emissions reduction projects, and our reported total Scope 1 and Scope 2 (market) emissions for 2021 was 1,059,000 metric ton CO2e, therefore we arrived at 0.1% through $(1,190/1,059,000) * 100\% = 0.1\%$. Emissions reduction projects includes Energy conservation projects implemented in the 2022 reporting year.
Divestment		<Not Applicable>		
Acquisitions		<Not Applicable>		
Mergers		<Not Applicable>		
Change in output		<Not Applicable>		
Change in methodology		<Not Applicable>		
Change in boundary		<Not Applicable>		
Change in physical operating conditions		<Not Applicable>		
Unidentified	31200	Increased		Miscellaneous non-itemized remaining balance
Other		<Not Applicable>		

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Market-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 0% but less than or equal to 5%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	9000	2953000	2962000
Consumption of purchased or acquired electricity	<Not Applicable>	720000	1350000	2070000
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	0	<Not Applicable>	0
Total energy consumption	<Not Applicable>	729000	4303000	5032000

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	No
Consumption of fuel for the generation of heat	Yes
Consumption of fuel for the generation of steam	Yes
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Sustainable biomass

Heating value

HHV

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Comment

Other biomass

Heating value

HHV

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Comment

Other renewable fuels (e.g. renewable hydrogen)

Heating value

HHV

Total fuel MWh consumed by the organization

9000

MWh fuel consumed for self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

9000

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Comment

Rounded to nearest thousands. Sustainable Aviation Fuel (SAF). We use emission factors from ICAO's "CORSIA Default Life Cycle Emissions Values for CORSIA Eligible Fuels," June 2022 release.

Coal

Heating value

HHV

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Comment

Oil

Heating value

HHV

Total fuel MWh consumed by the organization

127000

MWh fuel consumed for self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

127000

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Comment

Rounded to nearest thousands. Fuel Oil. We use Australia National Greenhouse and Energy Reporting (NGER) emissions factors for our sites located in Australia, and US EPA 40 CFR 98 Subpart C table C-1, as amended at 78 FR 71950, Nov. 29, 2013 for all other sites.

Gas**Heating value**

HHV

Total fuel MWh consumed by the organization

1928000

MWh fuel consumed for self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

1928000

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Comment

Rounded to nearest thousands. Natural Gas. We use US EPA 40 CFR 98 Subpart C table C-1, as amended at 78 FR 71950, Nov. 29, 2013 for sites in US and Canada; Australia National Greenhouse and Energy Reporting (NGER) emissions factors for our sites located in Australia, and CRC Energy Efficiency Schema for sites in the UK. All other sites rely on the 2006 IPCC Guidelines for National Greenhouse Gas Inventories emission factors.

Other non-renewable fuels (e.g. non-renewable hydrogen)**Heating value**

HHV

Total fuel MWh consumed by the organization

898000

MWh fuel consumed for self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

898000

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Comment

Rounded to nearest thousands. We use Australia National Greenhouse and Energy Reporting (NGER) emissions factors for our sites located in Australia, and US EPA 40CFR 98 Subpart C table C-1, as amended at 78 FR 71950, Nov. 29, 2013 for all other sites.

Total fuel**Heating value**

HHV

Total fuel MWh consumed by the organization

2962000

MWh fuel consumed for self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

1034000

MWh fuel consumed for self-generation of steam

1928000

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Comment

We use Australia National Greenhouse and Energy Reporting (NGER) emissions factors for our sites located in Australia, and US EPA 40CFR 98 Subpart C table C-1, as amended at 78 FR 71950, Nov. 29, 2013 for all other sites.

C8.2d

(C8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	0	0	0	0
Heat	0	0	0	0
Steam	0	0	0	0
Cooling	0	0	0	0

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and/or cooling amounts that were accounted for at a zero or near-zero emission factor in the market-based Scope 2 figure reported in C6.3.

Country/area of low-carbon energy consumption

United States of America

Sourcing method

Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier

Electricity

Low-carbon technology type

Renewable energy mix, please specify

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

134000

Tracking instrument used

Contract

Country/area of origin (generation) of the low-carbon energy or energy attribute

United States of America

Are you able to report the commissioning or re-powering year of the energy generation facility?

No

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

<Not Applicable>

Comment

Rounded to thousands. Boeing South Carolina utility Green Tariff with the local utility supplier. Energy mix is wind and solar.

Country/area of low-carbon energy consumption

United States of America

Sourcing method

Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier

Electricity

Low-carbon technology type

Renewable energy mix, please specify

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

313000

Tracking instrument used

US-REC

Country/area of origin (generation) of the low-carbon energy or energy attribute

United States of America

Are you able to report the commissioning or re-powering year of the energy generation facility?

No

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

<Not Applicable>

Comment

Rounded to thousands. Auburn, Renton, Frederickson, Bellevue, Kent, Portland. Energy mix is wind and solar.

Country/area of low-carbon energy consumption

United States of America

Sourcing method

Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier

Electricity

Low-carbon technology type

Renewable energy mix, please specify

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

132000

Tracking instrument used

US-REC

Country/area of origin (generation) of the low-carbon energy or energy attribute

United States of America

Are you able to report the commissioning or re-powering year of the energy generation facility?

No

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

<Not Applicable>

Comment

Rounded to nearest thousands. Green tariffs received by some sites in Illinois, Ohio, Pennsylvania, Texas. Energy mix is wind and solar.

Country/area of low-carbon energy consumption

United States of America

Sourcing method

Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier

Electricity

Low-carbon technology type

Wind

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

49000

Tracking instrument used

US-REC

Country/area of origin (generation) of the low-carbon energy or energy attribute

United States of America

Are you able to report the commissioning or re-powering year of the energy generation facility?

Yes

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

Comment

Rounded to nearest thousands. Applies to Dallas, Richardson, San Antonio, and Houston sites. Energy mix is wind.

Country/area of low-carbon energy consumption

United States of America

Sourcing method

Default delivered electricity from the grid (e.g. standard product offering by an energy supplier), supported by energy attribute certificates

Energy carrier

Electricity

Low-carbon technology type

Renewable energy mix, please specify

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

18000

Tracking instrument used

US-REC

Country/area of origin (generation) of the low-carbon energy or energy attribute

United States of America

Are you able to report the commissioning or re-powering year of the energy generation facility?

No

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

<Not Applicable>

Comment

Rounded to the nearest thousand. Huntington Beach, CA (Orange County Power Authority). Energy mix is solar and wind.

Country/area of low-carbon energy consumption

United States of America

Sourcing method

Unbundled procurement of energy attribute certificates (EACs)

Energy carrier

Electricity

Low-carbon technology type

Renewable energy mix, please specify

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

36000

Tracking instrument used

US-REC

Country/area of origin (generation) of the low-carbon energy or energy attribute

United States of America

Are you able to report the commissioning or re-powering year of the energy generation facility?

No

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

<Not Applicable>

Comment

Rounded to the nearest thousand. Applied to the Arizona Data Center (Iron Mountain). Energy mix is wind and solar.

Country/area of low-carbon energy consumption

United States of America

Sourcing method

Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier

Electricity

Low-carbon technology type

Solar

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

7000

Tracking instrument used

US-REC

Country/area of origin (generation) of the low-carbon energy or energy attribute

United States of America

Are you able to report the commissioning or re-powering year of the energy generation facility?

No

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

<Not Applicable>

Comment

Rounded to the nearest thousand. Applicable to the Mesa, AZ facility (Salt River Project - SRP).

Country/area of low-carbon energy consumption

United States of America

Sourcing method

Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier

Electricity

Low-carbon technology type

Renewable energy mix, please specify

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

500

Tracking instrument used

US-REC

Country/area of origin (generation) of the low-carbon energy or energy attribute

United States of America

Are you able to report the commissioning or re-powering year of the energy generation facility?

No

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

<Not Applicable>

Comment

Rounded to the nearest hundred. Applied to Pleasanton (East Bay Community Electric). Energy mix is wind and solar.

Country/area of low-carbon energy consumption

United Kingdom of Great Britain and Northern Ireland

Sourcing method

Unbundled procurement of energy attribute certificates (EACs)

Energy carrier

Electricity

Low-carbon technology type

Wind

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

10000

Tracking instrument used

GO

Country/area of origin (generation) of the low-carbon energy or energy attribute

United Kingdom of Great Britain and Northern Ireland

Are you able to report the commissioning or re-powering year of the energy generation facility?

No

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

<Not Applicable>

Comment

Rounded to nearest thousands. GO received by UK sites

C8.2g

(C8.2g) Provide a breakdown by country/area of your non-fuel energy consumption in the reporting year.

Country/area

United States of America

Consumption of purchased electricity (MWh)

1958000

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

0

Consumption of self-generated heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

1958000

Country/area

Australia

Consumption of purchased electricity (MWh)

25000

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

0

Consumption of self-generated heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

25000

Country/area

Brazil

Consumption of purchased electricity (MWh)

1000

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

0

Consumption of self-generated heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

1000

Country/area

Canada

Consumption of purchased electricity (MWh)

31000

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

0

Consumption of self-generated heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

31000

Country/area

China

Consumption of purchased electricity (MWh)

2000

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

0

Consumption of self-generated heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

2000

Country/area

France

Consumption of purchased electricity (MWh)

1000

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

0

Consumption of self-generated heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

1000

Country/area

Germany

Consumption of purchased electricity (MWh)

5000

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

0

Consumption of self-generated heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

5000

Country/area

India

Consumption of purchased electricity (MWh)

11000

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

0

Consumption of self-generated heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

11000

Country/area

Italy

Consumption of purchased electricity (MWh)

2000

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

0

Consumption of self-generated heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

2000

Country/area

Japan

Consumption of purchased electricity (MWh)

1000

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

0

Consumption of self-generated heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

1000

Country/area

Mexico

Consumption of purchased electricity (MWh)

1000

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

0

Consumption of self-generated heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

1000

Country/area

Netherlands

Consumption of purchased electricity (MWh)

1000

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

0

Consumption of self-generated heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

1000

Country/area

Poland

Consumption of purchased electricity (MWh)

2000

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

0

Consumption of self-generated heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

2000

Country/area

Russian Federation

Consumption of purchased electricity (MWh)

1000

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

0

Consumption of self-generated heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

1000

Country/area

Singapore

Consumption of purchased electricity (MWh)

5000

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

0

Consumption of self-generated heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

5000

Country/area

Sweden

Consumption of purchased electricity (MWh)

1000

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

0

Consumption of self-generated heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

1000

Country/area

Ukraine

Consumption of purchased electricity (MWh)

1000

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

0

Consumption of self-generated heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

1000

Country/area

United Kingdom of Great Britain and Northern Ireland

Consumption of purchased electricity (MWh)

18000

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

0

Consumption of self-generated heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

18000

C-TO8.5**(C-TO8.5) Provide any efficiency metrics that are appropriate for your organization's transport products and/or services.****Activity**

Aviation

Metric figure**Metric numerator**tCO₂e**Metric denominator**

Financial: Revenue-ton.km

Metric numerator: Unit total**Metric denominator: Unit total****% change from previous year****Please explain**

A primary performance metric used in comparison of commercial aircraft is fuel consumption (which is proportional to CO₂ emissions) per passenger kilometer. Each new generation of aircraft improves upon the prior generation of similar aircraft by 15 to 25 percent. For example, the 737MAX generation of our aircraft has 20 percent less CO₂ emissions per passenger kilometre than the 737NG generation of aircraft; and the 787 aircraft has 25 percent less CO₂ emissions per passenger kilometre than the 767-300ER. As aircraft are long-lived assets, with long product development cycles lasting several years, and long production lifetimes, they do not change materially on a year to year basis except when significant performance improvement packages are incorporated.

C9. Additional metrics**C9.1**

(C9.1) Provide any additional climate-related metrics relevant to your business.

Description

Energy usage

Metric value

11799000

Metric numerator

Energy Consumption (MMBTU)

Metric denominator (intensity metric only)

% change from previous year

11

Direction of change

Decreased

Please explain

The 10 percent energy reduction as compared to 2017 baseline target is set based on the consumption of Natural Gas and Electricity usage from Core Metric Sites, which represent roughly 70 percent of Boeing's total energy consumption. Percent change listed is calculated comparing 2022 to baseline year (2017).

C-TO9.3/C-TS9.3

(C-TO9.3/C-TS9.3) Provide tracking metrics for the implementation of low-carbon transport technology over the reporting year.

Activity

Aviation

Metric

Other, please specify (Aircraft compatible with sustainable aviation fuel)

Technology

Other, please specify (Compatible with sustainable aviation fuel)

Metric figure

100

Metric unit

Other, please specify (Percentage of delivered aircraft)

Percentage of delivered aircraft which are compatible with sustainable aviation fuel

Explanation

All sustainable aviation fuels approved for use in aviation are drop-in replacement fuels. Fuel that meets the requirements described in D7566 are reclassified as ASTM D1655 Jet A/A1 fuel and there are no restrictions for use of the fuel and the same compliance and performance guarantee are met. Today, sustainable aviation fuels are mixed directly with conventional jet fuel up to a 50/50 blend — the maximum allowed under current fuel specifications. All current production and in-service Boeing commercial airplanes are compatible with sustainable aviation fuel produced under and meeting this ASTM specification.

Activity

Aviation

Metric

Production

Technology

Other, please specify (Transition to latest generation aircraft)

Metric figure

100

Metric unit

Other, please specify (% airplane delivered)

Metric figures are provided in the explanation field

Explanation

Each commercial airplane model that Boeing produces is the most efficient in its class and represents the best in class low-carbon transport technology. The data below indicates transition to next generation of aircraft technology:

- 100 percent of all 737 airplanes delivered in 2021 (245 of 245); First deliveries of the latest generation 737MAX were in 2017, and the 737MAX is 20 percent more efficient than the 737NG. (Excludes 737-800's delivered to P8 program)

- 100 percent of all 787 airplanes delivered in 2021 (14 of 14); First delivery of 787 was in 2011, and the 787 is 20-25 percent more efficient than the airplanes they replace.

- 0 percent of all 777 airplanes delivered in 2021 (0 of 24); 777X airplanes are currently in development; they will be the most fuel efficient airplanes in its class when the 777X enters service.

C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

	Investment in low-carbon R&D	Comment
Row 1	Yes	Boeing invests in low-carbon R&D

C-TO9.6a/C-TS9.6a

(C-TO9.6a/C-TS9.6a) Provide details of your organization’s investments in low-carbon R&D for transport-related activities over the last three years.

Activity

Aviation

Technology area

Other, please specify (All)

Stage of development in the reporting year

Applied research and development

Average % of total R&D investment over the last 3 years

70

R&D investment figure in the reporting year (unit currency as selected in C0.4) (optional)

2852000000

Average % of total R&D investment planned over the next 5 years

70

Explain how your R&D investment in this technology area is aligned with your climate commitments and/or climate transition plan

Boeing estimates that roughly 60-80 percent of its R&D dollars go toward efficiency improvement, which correlate directly to CO2 emission reduction. Research and development expense increased by \$603 million in 2022 compared with 2021 primarily due to higher research and development expenditures on 777X, 737 MAX, as well as BCA and enterprise investments in product development. Research and development expense decreased by \$227 million in 2021 compared with 2020 primarily due to lower BCA and enterprise investments in product development and lower spending on the 777X program. (Source: 2022 Boeing Annual Report)

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

ghg_emissions_and_waterwithdrawal_assurance_statement_2022.pdf

Page/ section reference

Pages 1-3

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

Page/ section reference

Pages 1-3

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Scope 2 approach

Scope 2 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

ghg_emissions_and_waterwithdrawal_assurance_statement_2022.pdf

Page/ section reference

Pages 1-3

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

Scope 2 approach

Scope 2 market-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

ghg_emissions_and_waterwithdrawal_assurance_statement_2022.pdf

Page/ section reference

Pages 1-3

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

Scope 2 approach

Scope 2 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

ghg_emissions_and_waterwithdrawal_assurance_statement_2022.pdf

Page/ section reference

Pages 1-3

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

Scope 2 approach

Scope 2 market-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

ghg_emissions_and_waterwithdrawal_assurance_statement_2022.pdf

Page/ section reference

Pages 1-3

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

C10.1c

(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope 3 category

Scope 3: Use of sold products

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

ghg_emissions_and_waterwithdrawal_assurance_statement_2022.pdf

Page/section reference

Page 1-3

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

Scope 3 category

Scope 3: Business travel

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

ghg_emissions_and_waterwithdrawal_assurance_statement_2022.pdf

Page/section reference

Pages 1-3

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

Scope 3 category

Scope 3: Use of sold products

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

ghg_emissions_and_waterwithdrawal_assurance_statement_2022.pdf

Page/section reference

Page 1-3

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

Scope 3 category

Scope 3: Business travel

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

ghg_emissions_and_waterwithdrawal_assurance_statement_2022.pdf

Page/section reference

Pages 1-3

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?

Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C8. Energy	Renewable energy products	ISO 14064-3	As part of Boeing's annual third party verification process, Renewable Energy Certificates documents and associated GHG savings are verified by DNV and highlighted within our verification letters.
C8. Energy	Renewable energy products	ISO 14064-3	As part of Boeing's annual third party verification process, Renewable Energy Certificates documents and associated GHG savings are verified by DNV and highlighted within our verification letters.

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

Yes

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.

EU ETS
UK ETS

EU ETS & UK ETS, Aviation only. This regulation does not impact our manufacturing and worksite operations. It is applicable to our executive flights.

C11.1b

(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.

EU ETS

% of Scope 1 emissions covered by the ETS

0

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1 2022

Period end date

December 31 2022

Allowances allocated

2

Allowances purchased

102

Verified Scope 1 emissions in metric tons CO2e

104

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Other, please specify ((aircraft we fly within the EU)

Comment

Aircraft we fly within the EU. The % number is rounded to a whole number.

UK ETS

% of Scope 1 emissions covered by the ETS

0

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1 2022

Period end date

December 31 2022

Allowances allocated

3

Allowances purchased

199

Verified Scope 1 emissions in metric tons CO2e

246

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Other, please specify (Aircraft we fly between EU and UK)

Comment

Aircraft we fly between EU and UK. The % number is rounded to a whole number.

C11.1d

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

Boeing plans to reduce its GHG Emissions and continue to be fully compliant with all GHG Emissions related regulations. We are on track to be compliant with the EU ETS and UK ETS, effective 2022. In 2021, Boeing also voluntarily participated in the inaugural CORSIA data call by the US FAA. We have implemented internal processes for tracking and reporting relevant data. For the Washington Climate Commitment Act (CCA), we are actively implementing internal controls to ensure integrity of reporting. We are on track to meet regulatory obligations when it takes effect in 2023.

C11.2

(C11.2) Has your organization canceled any project-based carbon credits within the reporting year?

Yes

C11.2a

(C11.2a) Provide details of the project-based carbon credits canceled by your organization in the reporting year.

Project type

Forest ecosystem restoration

Type of mitigation activity

Emissions reduction

Project description

"Nestled in the lush jungles of eastern Cambodia, the Keo Seima Wildlife Sanctuary (KSWS) is a haven for biodiversity and a vast storehouse of forest carbon. Spanning over 290,000 hectares, the protected area is home to a diverse array of wildlife, including 84 globally threatened species and the world's largest population of black-shanked douc and yellow-cheeked crested gibbon. The KSWS also holds a unique cultural significance for the Indigenous Bunong people, who have called this forest home for centuries and whose culture and livelihoods are deeply entwined with the forest. Despite the importance of this area, it faces a high threat of deforestation due to various factors, including forest conversion for agriculture and illegal logging. The Keo Seima Wildlife Sanctuary REDD+ Project (KSWS REDD+), launched in 2010 as a collaboration between the Royal Government of Cambodia (RGC) and the Wildlife Conservation Society (WCS), has made impressive strides in reducing deforestation and promoting alternative livelihoods. The project has prevented the release of more than 20 million tons of CO2e emissions and saved 25,000 hectares of forest from destruction. It has also created jobs, supported education and training initiatives, and established an ecotourism venture that supports local communities. The project has also distributed nearly \$1 million through its Cash for Communities (C4C) program, a mechanism that shares the revenue of carbon credits sales. These funds go directly to local communities, who decide how they should be spent to support sustainable development activities such as healthcare, education, and infrastructure like wells and bridges. In Cambodia, the Ministry of Environment is at the forefront of protecting the country's protected areas, with a focus on preserving the nation's forests. The WCS is a leading global conservation organization operating in 60+ countries and brings its extensive knowledge and experience in conservation to the project."

Credits canceled by your organization from this project in the reporting year (metric tons CO2e)

76102

Purpose of cancellation

Voluntary offsetting

Are you able to report the vintage of the credits at cancellation?

Yes

Vintage of credits at cancellation

2019

Were these credits issued to or purchased by your organization?

Purchased

Credits issued by which carbon-crediting program

VCS (Verified Carbon Standard)

Method(s) the program uses to assess additionality for this project

Consideration of legal requirements
Investment analysis
Market penetration assessment

Approach(es) by which the selected program requires this project to address reversal risk

Monitoring and compensation

Potential sources of leakage the selected program requires this project to have assessed

Activity-shifting

Provide details of other issues the selected program requires projects to address

Project also conducted a sensitivity analysis.

Comment

Project type

Forest ecosystem restoration

Type of mitigation activity

Emissions reduction

Project description

"The FSM-REDD Project, proposed by Florestal Santa Maria S/A (FSM), is located in Colniza Municipality, Mato Grosso, Brazil. This region is part of the Brazilian Amazon and known as Deforestation Arch, due to the intense deforestation pressure. As an alternative to combat this, FSM-REDD Project estimates the avoidance of 29,923,331 tCO2 throughout 30 years within Fazenda Florestal Santa Maria – private land owned by FSM, comprising 71,714 ha. of native forest. FSM is committed to local socio-environmental development. Project activities encompass a partnership with a neighboring State Park, promoting local initiatives to create fire brigades. Also, FSM will create together with Colniza City Hall, technical forestry schools targeting education of local youngsters."

Credits canceled by your organization from this project in the reporting year (metric tons CO2e)

173898

Purpose of cancellation

Voluntary offsetting

Are you able to report the vintage of the credits at cancellation?

Yes

Vintage of credits at cancellation

2019

Were these credits issued to or purchased by your organization?

Purchased

Credits issued by which carbon-crediting program

VCS (Verified Carbon Standard)

Method(s) the program uses to assess additionality for this project

Consideration of legal requirements

Investment analysis
Barrier analysis
Market penetration assessment

Approach(es) by which the selected program requires this project to address reversal risk

Monitoring and compensation

Potential sources of leakage the selected program requires this project to have assessed

Activity-shifting
Market leakage

Provide details of other issues the selected program requires projects to address

Project also assesses leakage outside the leakage belt. Additionally, the project conducted a sensitivity analysis.

Comment

Project type

Wind

Type of mitigation activity

Emissions reduction

Project description

"The purpose of the project activity is to generate clean electricity with utilization of wind energy. The project consists of 30 numbers of GE 137 Wind Turbine Generators (WTGs) of 3.0 MW capacities each. The project WTGs are installed in the Nongwang, Bueng Prue and Samnaktakthro sub-districts of Thepharak District, Nakhonratchasima Province in Thailand. All the WTGs of the project activity were commissioned on 27/11/2018. The electricity generated by the project is exported to the Thailand National grid"

Credits canceled by your organization from this project in the reporting year (metric tons CO2e)

30479

Purpose of cancellation

Voluntary offsetting

Are you able to report the vintage of the credits at cancellation?

Yes

Vintage of credits at cancellation

2020

Were these credits issued to or purchased by your organization?

Purchased

Credits issued by which carbon-crediting program

VCS (Verified Carbon Standard)

Method(s) the program uses to assess additionality for this project

Consideration of legal requirements
Investment analysis

Approach(es) by which the selected program requires this project to address reversal risk

No risk of reversal

Potential sources of leakage the selected program requires this project to have assessed

Not assessed

Provide details of other issues the selected program requires projects to address

Since the project is a renewable energy project, there is no carbon storage and therefore no risk of reversal. Additionally, the project performed a sensitivity analysis.

Comment

Project type

Hydro

Type of mitigation activity

Emissions reduction

Project description

"AKOCAK is a run of river type hydroelectric power plant (HEPP) project located on Karadere River, in Trabzon province, in East Black sea region of Turkey. The purpose of the project is to generate energy from the running waters of Karadere River. The project includes two weirs. The first weir called Erikli weir shall be built on Alcak Brook, a branch of Karadere, on 1,339 meters riverbed elevation. A sediment pool of 41 meters long and 2.3 meters wide shall be built along the riverbed. The other weir called Akocak weir shall be built on Karadere branch of the river, on 1,328 meter riverbed elevation."

Credits canceled by your organization from this project in the reporting year (metric tons CO2e)

40000

Purpose of cancellation

Voluntary offsetting

Are you able to report the vintage of the credits at cancellation?

Yes

Vintage of credits at cancellation

2019

Were these credits issued to or purchased by your organization?

Purchased

Credits issued by which carbon-crediting program

VCS (Verified Carbon Standard)

Method(s) the program uses to assess additionality for this project

Consideration of legal requirements
Investment analysis
Market penetration assessment

Approach(es) by which the selected program requires this project to address reversal risk

No risk of reversal

Potential sources of leakage the selected program requires this project to have assessed

Activity-shifting

Provide details of other issues the selected program requires projects to address

The energy generating equipment is not transferred from or to another activity. Therefore "0" for leakage. Additionally, since the project is a renewable energy project, there is no carbon storage and therefore no risk of reversal. Project also performed a sensitivity analysis.

Comment

Project type

Hydro

Type of mitigation activity

Emissions reduction

Project description

"Aslancik Hydro Power Plant project is located in Giresun province of Turkey with an installed capacity of 93 MWe which feeds emission free electricity into the Turkish national grid."

Credits canceled by your organization from this project in the reporting year (metric tons CO2e)

91000

Purpose of cancellation

Voluntary offsetting

Are you able to report the vintage of the credits at cancellation?

Yes

Vintage of credits at cancellation

2019

Were these credits issued to or purchased by your organization?

Purchased

Credits issued by which carbon-crediting program

VCS (Verified Carbon Standard)

Method(s) the program uses to assess additionality for this project

Consideration of legal requirements
Investment analysis
Barrier analysis
Market penetration assessment

Approach(es) by which the selected program requires this project to address reversal risk

No risk of reversal

Potential sources of leakage the selected program requires this project to have assessed

Not assessed

Provide details of other issues the selected program requires projects to address

Since the project is a renewable energy project, there is no carbon storage and therefore no risk of reversal. Additionally, the project performed a sensitivity analysis.

Comment

Project type

Hydro

Type of mitigation activity

Emissions reduction

Project description

"The Government of India and the Government of Himachal Pradesh (GOHP) have identified the Sutlej River as an important source of hydropower and have initiated hydroelectric projects along Sutlej and its tributaries. The Sutlej River rises in the Tibetan Plateau, passes via steep valleys and gorges through the Himalayan Mountains and foothills and meets the Arabian Sea across the plains of Northern India and Pakistan. The Karcham-Wangtoo Hydroelectric Project (KWHEP) forms a part of an overall plan of development of the Sutlej river basin hydropower potential proposed by the GOHP. The project is initially executed by Jaypee Karcham Hydro Corporation Limited (JKHCL), a special purpose vehicle formed by the promoter group Jaiprakash Associates Limited (JAL). From 01/09/2015 onwards, the Himachal Baspa Power Company Ltd has owned the power plant and thus new owner is acting as project proponent for the proposed project activity."

Credits canceled by your organization from this project in the reporting year (metric tons CO2e)

69000

Purpose of cancellation

Voluntary offsetting

Are you able to report the vintage of the credits at cancellation?

Yes

Vintage of credits at cancellation

2019

Were these credits issued to or purchased by your organization?

Purchased

Credits issued by which carbon-crediting program

VCS (Verified Carbon Standard)

Method(s) the program uses to assess additionality for this project

Consideration of legal requirements
 Investment analysis
 Market penetration assessment

Approach(es) by which the selected program requires this project to address reversal risk

No risk of reversal

Potential sources of leakage the selected program requires this project to have assessed

Not assessed

Provide details of other issues the selected program requires projects to address

Since the project is a renewable energy project, there is no carbon storage and therefore no risk of reversal.

Comment**Project type**

Coal mine/bed methane

Type of mitigation activity

Emissions reduction

Project description

"Guizhou Panjiang Low Concentration Coal Mine Methane Power Generation Project Phase 2 (hereinafter referred to as the Project) is located in Pan County, Liu Panshui City, Guizhou Province, China. The aim of the Project is to utilize the extracted CMM with methane concentration of 6-30% to produce electricity. No coal bed methane (CBM) or ventilation air methane (VAM) utilization is involved. Thirty CMM power generation units will be installed with a total installed capacity of 17.7MW, destroying 25.22 million m3 of methane annually. After the full operation of the Project, the annual exported electricity will be 78,163 MWh, which will be supplied to the coalmines through the electricity distribution network in Panjiang coal mine area, replacing the electricity that would otherwise have been purchased from the CSPG. The waste heat from the generators will be recovered by waste heat boilers to provide free hot water to the coal mines, which was provided by waste coal fired boilers before the implementation of the Project. The expected total emission reduction of the Project in the crediting periods of 10 years is 4,199,250 tCO_{2e}, and the annual emission reduction is estimated to be 419,925 tCO_{2e}."

Credits canceled by your organization from this project in the reporting year (metric tons CO_{2e})

381402

Purpose of cancellation

Voluntary offsetting

Are you able to report the vintage of the credits at cancellation?

Yes

Vintage of credits at cancellation

2020

Were these credits issued to or purchased by your organization?

Purchased

Credits issued by which carbon-crediting program

VCS (Verified Carbon Standard)

Method(s) the program uses to assess additionality for this project

Consideration of legal requirements

Approach(es) by which the selected program requires this project to address reversal risk

Monitoring and compensation

Potential sources of leakage the selected program requires this project to have assessed

Activity-shifting

Provide details of other issues the selected program requires projects to address

Project also performed a sensitivity analysis.

According to Verra documentation:

The formula for leakage is given as follows:

$$LE_y = LE_{d,y} + LE_{o,y} \quad (23)$$

Where:

LE_y = Leakage emissions in year y (tCO_{2e})

$LE_{d,y}$ = Leakage emissions due to displacement of other baseline thermal energy uses of methane in year y (tCO_{2e})

$LE_{o,y}$ = Leakage emissions due to other uncertainties in year y (tCO_{2e})

Since the baseline scenario does not include thermal energy use, $LE_y = LE_{o,y}$

The leakage of the proposed project activity will not result from:

- Impact of CDM project activity on coal production – the CDM project activity is not designed to affect the on-going coal production, with the gas extraction and ventilation systems as part of the baseline scenario, and therefore leakage from this is zero;
- Impact of CDM project activity on coal prices and market dynamics – according to the methodology ACM0008 (Version 07), the proposed project is considered having no impact on coal price and market dynamics ex ante, unless the EB instruct otherwise in future.

Therefore, $LE_y=0$.

Comment

Project type

Coal mine/bed methane

Type of mitigation activity

Emissions reduction

Project description

"Guizhou Dongyijing CMM Power Generation Project (hereinafter referred to as the Project) is located in Songhe township, Pan County, Liu Panshui City, Guizhou Province, China. The purpose of the Project is to utilize the extracted CMM with low concentration methane concentration to produce electricity. No coal bed methane (CBM) or ventilation air methane (VAM) utilization is involved. The CMM power generation units will be installed with a total installed capacity of 6.0MW, destroying 10.66 million m3 of methane annually. After the full operation of the Project, the annual exported electricity will be 28,200 MWh, which will be supplied to the coalmines through the electricity distribution network in Songhe coal mine area, replacing the electricity that would otherwise have been purchased from the CSPG. The waste heat from the generators will be recovered by waste heat boilers to provide free hot water to the coal mines, which was provided by waste coal fired boilers before the implementation of the Project. It is estimated that in the 10 years crediting period of the project (from 08-May-2019 to 07-May-2029), the average annual GHG emission reduction will be 174,220 tCO₂e, with the total emission reduction of 1,742,200 tCO₂e."

Credits canceled by your organization from this project in the reporting year (metric tons CO₂e)

11287

Purpose of cancellation

Voluntary offsetting

Are you able to report the vintage of the credits at cancellation?

Yes

Vintage of credits at cancellation

2021

Were these credits issued to or purchased by your organization?

Purchased

Credits issued by which carbon-crediting program

VCS (Verified Carbon Standard)

Method(s) the program uses to assess additionality for this project

Consideration of legal requirements

Approach(es) by which the selected program requires this project to address reversal risk

Monitoring and compensation

Potential sources of leakage the selected program requires this project to have assessed

Activity-shifting

Provide details of other issues the selected program requires projects to address

Project also conducted a sensitivity analysis.

Comment

"As per methodology ACM0008 (version 08.0), leakage may occur if the project activity prevents methane from being used to meet baseline thermal energy demand, whether as a result of physical constraints on delivery, or price changes. Since the baseline scenario does not include thermal energy, the leakage is taken as 0."

Project type

Wind

Type of mitigation activity

Emissions reduction

Project description

"The Project is the second phase of the Capricorn Ridge Wind Farm and became operational on May 20, 2008. The Project is a new addition that is metered separately from the existing phases of the wind farm. The Project has 75 GE 1.5 MW wind turbines with a capacity of 112.5 MW. The towers have a rated wind speed of 12 m/s, three rotor blades, a rotor diameter of 77 meters, sweep area of 4,657m² and a rotor speed of 10.1-20.4 rpm. The towers also come equipped with a control system that is a programmable logic controller and has a remote control and monitoring system. The objective of the project is to increase the amount of wind-generated electricity that is supplied to the Lower Colorado River Authority (LCRA) substation in Coke County, TX, a part of the Electricity Reliability Council of Texas (ERCOT) grid. The Project will produce clean, renewable energy that will displace traditional fossil-fueled energy sources and reduce greenhouse gas emissions"

Credits canceled by your organization from this project in the reporting year (metric tons CO₂e)

10000

Purpose of cancellation

Voluntary offsetting

Are you able to report the vintage of the credits at cancellation?

Yes

Vintage of credits at cancellation

2019

Were these credits issued to or purchased by your organization?

Purchased

Credits issued by which carbon-crediting program

VCS (Verified Carbon Standard)

Method(s) the program uses to assess additionality for this project

Consideration of legal requirements

Approach(es) by which the selected program requires this project to address reversal risk

No risk of reversal

Potential sources of leakage the selected program requires this project to have assessed

Activity-shifting

Provide details of other issues the selected program requires projects to address

Since the project is a renewable energy project, there is no carbon storage and therefore no risk of reversal.

Comment

Leakage emissions are no longer considered per the CDM Methodology.

Project type

Forest ecosystem restoration

Type of mitigation activity

Emissions reduction

Project description

"The Evergreen REDD+ Project is located in Apuí Municipality, Amazonas, currently the municipality with the 10th highest deforestation rate in Brazil making it a priority area for forest conservation worldwide. The present project continues to build on the success of the Fortaleza Ituxi REDD+ Project and the Unitor REDD+ Project, which have the same project developer and owner, and have provided an important proof of concept for the region. Evergreen's Project Area sums to 130,554.81 hectares of preserved forest area. Given the deforestation pressures and financial difficulties regarding sustainable economic activities in the Project Area, sale of the farm to private investors is considered the most plausible baseline scenario. In recent years, some of the project landowners have been approached to sell their properties. In this context, the conversion of a portion of the project area to pastureland by the project owners, to alleviate the financial pressure, followed by the regional business-as-usual scenario (BAU) is the most plausible future scenario, involving deforestation beyond Brazilian Forest Code limits and sale of illegal timber, followed by implementation of unsustainable cattle ranching operations. Provided that the present REDD+ project is approved, the landowner intends to improve the mechanisms of surveillance inside the Project Area, abandon planned deforestation activities, as well as implement activities that will result in climate, community, and biodiversity benefits."

Credits canceled by your organization from this project in the reporting year (metric tons CO2e)

50000

Purpose of cancellation

Voluntary offsetting

Are you able to report the vintage of the credits at cancellation?

Yes

Vintage of credits at cancellation

2021

Were these credits issued to or purchased by your organization?

Purchased

Credits issued by which carbon-crediting program

VCS (Verified Carbon Standard)

Method(s) the program uses to assess additionality for this project

Consideration of legal requirements

Investment analysis

Barrier analysis

Market penetration assessment

Approach(es) by which the selected program requires this project to address reversal risk

Monitoring and compensation

Potential sources of leakage the selected program requires this project to have assessed

Not assessed

Provide details of other issues the selected program requires projects to address

Project also assesses leakage outside the leakage barrier.

Comment

Project type

Forest ecosystem restoration

Type of mitigation activity

Emissions reduction

Project description

"The Katingan Restoration and Conservation Project ('The Katingan Project') protects and restores 149,800 hectares of peatland ecosystems, to offer local communities sustainable sources of income, and to tackle global climate change. The project lies within the districts of Katingan and Kotawaringin Timur in Central Kalimantan Province and covers one of the largest remaining intact peat swamp forests in Indonesia"

Credits canceled by your organization from this project in the reporting year (metric tons CO2e)

100000

Purpose of cancellation

Voluntary offsetting

Are you able to report the vintage of the credits at cancellation?

Yes

Vintage of credits at cancellation

2020

Were these credits issued to or purchased by your organization?

Purchased

Credits issued by which carbon-crediting program

VCS (Verified Carbon Standard)

Method(s) the program uses to assess additionality for this project

Investment analysis

Approach(es) by which the selected program requires this project to address reversal risk

Monitoring and compensation
No risk of reversal

Potential sources of leakage the selected program requires this project to have assessed

Ecological leakage

Provide details of other issues the selected program requires projects to address

Leakage is also assessed based on estimation of emissions from displacement of pre-project agricultural activities (LK-ARR).

Comment

Project type

Coal mine/bed methane

Type of mitigation activity

Emissions reduction

Project description

"Guizhou Panjiang Low Concentration Coal Mine Methane Power Generation Project Phase 2 (hereinafter referred to as the Project) is located in Pan County, Liu Panshui City, Guizhou Province, China. The aim of the Project is to utilize the extracted CMM with methane concentration of 6-30% to produce electricity. No coal bed methane (CBM) or ventilation air methane (VAM) utilization is involved. Thirty CMM power generation units will be installed with a total installed capacity of 17.7MW, destroying 25.22 million m³ of methane annually. After the full operation of the Project, the annual exported electricity will be 78,163 MWh, which will be supplied to the coalmines through the electricity distribution network in Panjiang coal mine area, replacing the electricity that would otherwise have been purchased from the CSPG. The waste heat from the generators will be recovered by waste heat boilers to provide free hot water to the coal mines, which was provided by waste coal fired boilers before the implementation of the Project. The expected total emission reduction of the Project in the crediting periods of 10 years is 4,199,250 tCO₂e, and the annual emission reduction is estimated to be 419,925 tCO₂e."

Credits canceled by your organization from this project in the reporting year (metric tons CO₂e)

18180

Purpose of cancellation

Voluntary offsetting

Are you able to report the vintage of the credits at cancellation?

Yes

Vintage of credits at cancellation

2021

Were these credits issued to or purchased by your organization?

Purchased

Credits issued by which carbon-crediting program

VCS (Verified Carbon Standard)

Method(s) the program uses to assess additionality for this project

Not assessed

Approach(es) by which the selected program requires this project to address reversal risk

Temporary crediting
No requirements

Potential sources of leakage the selected program requires this project to have assessed

Ecological leakage

Provide details of other issues the selected program requires projects to address

Project also performed a sensitivity analysis.

According to Verra documentation:

The formula for leakage is given as follows:

$$LE_y = LE_{d,y} + LE_{o,y} \quad (23)$$

Where:

LE_y = Leakage emissions in year y (tCO₂e)

$LE_{d,y}$ = Leakage emissions due to displacement of other baseline thermal energy uses of methane in year y (tCO₂e)

$LE_{o,y}$ = Leakage emissions due to other uncertainties in year y (tCO₂e)

Since the baseline scenario does not include thermal energy use, $LE_y = LE_{o,y}$

The leakage of the proposed project activity will not result from:

- Impact of CDM project activity on coal production – the CDM project activity is not designed to affect the on-going coal production, with the gas extraction and ventilation systems as part of the baseline scenario, and therefore leakage from this is zero;
- Impact of CDM project activity on coal prices and market dynamics – according to the methodology ACM0008 (Version 07), the proposed project is considered having no impact on coal price and market dynamics ex ante, unless the EB instruct otherwise in future.

Therefore, $LE_y=0$.

Comment

Project type

Coal mine/bed methane

Type of mitigation activity

Emissions reduction

Project description

"Guizhou Panjiang Low Concentration Coal Mine Methane Power Generation Project Phase 2 (hereinafter referred to as the Project) is located in Pan County, Liu Panshui City, Guizhou Province, China. The aim of the Project is to utilize the extracted CMM with methane concentration of 6-30% to produce electricity. No coal bed methane (CBM) or ventilation air methane (VAM) utilization is involved. Thirty CMM power generation units will be installed with a total installed capacity of 17.7MW, destroying 25.22 million m³ of methane annually. After the full operation of the Project, the annual exported electricity will be 78,163 MWh, which will be supplied to the coalmines through the electricity distribution network in Panjiang coal mine area, replacing the electricity that would otherwise have been purchased from the CSPG. The waste heat from the generators will be recovered by waste heat boilers to provide free hot water to the coal mines, which was provided by waste coal fired boilers before the implementation of the Project. The expected total emission reduction of the Project in the crediting periods of 10 years is 4,199,250 tCO_{2e}, and the annual emission reduction is estimated to be 419,925 tCO_{2e}."

Credits canceled by your organization from this project in the reporting year (metric tons CO_{2e})

7925

Purpose of cancellation

Voluntary offsetting

Are you able to report the vintage of the credits at cancellation?

Yes

Vintage of credits at cancellation

2019

Were these credits issued to or purchased by your organization?

Purchased

Credits issued by which carbon-crediting program

VCS (Verified Carbon Standard)

Method(s) the program uses to assess additionality for this project

Consideration of legal requirements

Investment analysis

Barrier analysis

Market penetration assessment

Approach(es) by which the selected program requires this project to address reversal risk

No requirements

Potential sources of leakage the selected program requires this project to have assessed

Ecological leakage

Provide details of other issues the selected program requires projects to address

Project also performed a sensitivity analysis.

According to Verra documentation:

The formula for leakage is given as follows:

$$LE_y = LE_{d,y} + LE_{o,y} \quad (23)$$

Where:

LE_y = Leakage emissions in year y (tCO_{2e})LE_{d,y} = Leakage emissions due to displacement of other baseline thermal energy uses of methane in year y (tCO_{2e})LE_{o,y} = Leakage emissions due to other uncertainties in year y (tCO_{2e})Since the baseline scenario does not include thermal energy use, LE_y = LE_{o,y}

The leakage of the proposed project activity will not result from:

- Impact of CDM project activity on coal production – the CDM project activity is not designed to affect the on-going coal production, with the gas extraction and ventilation systems as part of the baseline scenario, and therefore leakage from this is zero;
- Impact of CDM project activity on coal prices and market dynamics – according to the methodology ACM0008 (Version 07), the proposed project is considered having no impact on coal price and market dynamics ex ante, unless the EB instruct otherwise in future.

Therefore, LE_y=0.**Comment**

Project did not assess additionality because project is registered under CDM.

Project type

Coal mine/bed methane

Type of mitigation activity

Emissions reduction

Project description

"Guizhou Dongyijing CMM Power Generation Project (hereinafter referred to as the Project) is located in Songhe township, Pan County, Liu Panshui City, Guizhou Province, China. The purpose of the Project is to utilize the extracted CMM with low concentration methane concentration to produce electricity. No coal bed methane (CBM) or ventilation air methane (VAM) utilization is involved. The CMM power generation units will be installed with a total installed capacity of 6.0MW, destroying 10.66 million m³ of methane annually. After the full operation of the Project, the annual exported electricity will be 28,200 MWh, which will be supplied to the coalmines through the electricity distribution network in Songhe coal mine area, replacing the electricity that would otherwise have been purchased from the CSPG. The waste heat from the generators will be recovered by waste heat boilers to provide free hot water to the coal mines, which was provided by waste coal fired boilers before the implementation of the Project. It is estimated that in the 10 years crediting period of the project (from 08-May-2019 to 07-May-2029), the average annual GHG emission reduction will be 174,220 tCO_{2e}, with the total emission reduction of 1,742,200 tCO_{2e}."

Credits canceled by your organization from this project in the reporting year (metric tons CO_{2e})

134726

Purpose of cancellation

Voluntary offsetting

Are you able to report the vintage of the credits at cancellation?

Yes

Vintage of credits at cancellation

2020

Were these credits issued to or purchased by your organization?

Purchased

Credits issued by which carbon-crediting program

VCS (Verified Carbon Standard)

Method(s) the program uses to assess additionality for this project

Consideration of legal requirements

Approach(es) by which the selected program requires this project to address reversal risk

No requirements

No risk of reversal

Potential sources of leakage the selected program requires this project to have assessed

Activity-shifting

Ecological leakage

Provide details of other issues the selected program requires projects to address

Project also conducted a sensitivity analysis.

Comment

"As per methodology ACM0008 (version 08.0), leakage may occur if the project activity prevents methane from being used to meet baseline thermal energy demand, whether as a result of physical constraints on delivery, or price changes. Since the baseline scenario does not include thermal energy, the leakage is taken as 0."

Project type

Coal mine/bed methane

Type of mitigation activity

Emissions reduction

Project description

"Guizhou Dongyijing CMM Power Generation Project (hereinafter referred to as the Project) is located in Songhe township, Pan County, Liu Panshui City, Guizhou Province, China. The purpose of the Project is to utilize the extracted CMM with low concentration methane concentration to produce electricity. No coal bed methane (CBM) or ventilation air methane (VAM) utilization is involved. The CMM power generation units will be installed with a total installed capacity of 6.0MW, destroying 10.66 million m3 of methane annually. After the full operation of the Project, the annual exported electricity will be 28,200 MWh, which will be supplied to the coalmines through the electricity distribution network in Songhe coal mine area, replacing the electricity that would otherwise have been purchased from the CSPG. The waste heat from the generators will be recovered by waste heat boilers to provide free hot water to the coal mines, which was provided by waste coal fired boilers before the implementation of the Project. It is estimated that in the 10 years crediting period of the project (from 08-May-2019 to 07-May-2029), the average annual GHG emission reduction will be 174,220 tCO₂e, with the total emission reduction of 1,742,200 tCO₂e."

Credits canceled by your organization from this project in the reporting year (metric tons CO₂e)

36480

Purpose of cancellation

Voluntary offsetting

Are you able to report the vintage of the credits at cancellation?

Yes

Vintage of credits at cancellation

2019

Were these credits issued to or purchased by your organization?

Purchased

Credits issued by which carbon-crediting program

VCS (Verified Carbon Standard)

Method(s) the program uses to assess additionality for this project

Positive lists

Not assessed

Approach(es) by which the selected program requires this project to address reversal risk

Monitoring and compensation

Temporary crediting

No requirements

Potential sources of leakage the selected program requires this project to have assessed

Ecological leakage

Provide details of other issues the selected program requires projects to address

Project also conducted a sensitivity analysis.

Comment

"As per methodology ACM0008 (version 08.0), leakage may occur if the project activity prevents methane from being used to meet baseline thermal energy demand, whether as a result of physical constraints on delivery, or price changes. Since the baseline scenario does not include thermal energy, the leakage is taken as 0."

Project type

Wind

Type of mitigation activity

Emissions reduction

Project description

"The purpose of the project activity is to generate clean electricity with utilization of wind energy. The project consists of 30 numbers of GE Wind Turbine Generators (WTGs) of 3.0 MW capacities each. The project WTGs are installed in the Nongwang sub district of Thepharak district Nakhonratchasima Province in Thailand. All the WTGs of the project activity were commissioned on 16/03/2019. The electricity generated by the project is exported to the Thailand National grid."

Credits canceled by your organization from this project in the reporting year (metric tons CO2e)

19521

Purpose of cancellation

Voluntary offsetting

Are you able to report the vintage of the credits at cancellation?

Yes

Vintage of credits at cancellation

2020

Were these credits issued to or purchased by your organization?

Purchased

Credits issued by which carbon-crediting program

VCS (Verified Carbon Standard)

Method(s) the program uses to assess additionality for this project

Consideration of legal requirements

Approach(es) by which the selected program requires this project to address reversal risk

No requirements

No risk of reversal

Potential sources of leakage the selected program requires this project to have assessed

Ecological leakage

Provide details of other issues the selected program requires projects to address

Since the project is a renewable energy project, there is no carbon storage and therefore no risk of reversal. Additionally, the project performed a sensitivity analysis.

Comment

C11.3

(C11.3) Does your organization use an internal price on carbon?

No, but we anticipate doing so in the next two years

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers

Yes, our customers/clients

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement

Engagement & incentivization (changing supplier behavior)

Details of engagement

Run an engagement campaign to educate suppliers about climate change
Climate change performance is featured in supplier awards scheme
Facilitate adoption of a unified climate transition approach with suppliers

% of suppliers by number

100

% total procurement spend (direct and indirect)

60

% of supplier-related Scope 3 emissions as reported in C6.5

Rationale for the coverage of your engagement

Boeing uses the CDP Supply Chain program to request select suppliers to complete the CDP Climate Change questionnaire. Suppliers are chosen based on their alignment to Scope 3 categories 1, 2 & 4 representing approximately 80% of spend in those procurement categories.

Impact of engagement, including measures of success

Boeing has found that approximately half of the suppliers we engage via CDP Supply Chain Program have historically disclosed via CDP and have mature GHG management practices. Our efforts have resulted in a subset of suppliers doing first time CDP disclosures and learning through the disclosure process

Comment

Boeing is a participant in the CDP Supply Chain Program to engage select suppliers in completing the CDP Climate Change questionnaire

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement & Details of engagement

Collaboration & innovation	Other, please specify (Work with suppliers to join Boeing on the journey supporting the commercial aviation industry's ambition to achieve net-zero carbon emissions for global civil aviation by 2050)
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% of customers by number

100

% of customer - related Scope 3 emissions as reported in C6.5

Please explain the rationale for selecting this group of customers and scope of engagement

Boeing committed that its commercial airplanes will be capable to fly on 100% SAF by 2030. Long term, we support the commercial aviation industry's ambition to achieve net-zero carbon emissions for global civil aviation operations by 2050. We are partnering across the industry with the goal to reimagine and ultimately decarbonize commercial aviation in the second half of this century

Impact of engagement, including measures of success

We purchased 5.6 million gallons (21.2 million liters) of blended SAF to support our commercial operations. Governments around the world are unlocking policy mechanisms and corresponding offtake requirements in Europe and incentives such as the Blenders Tax Credit for SAF producers in the U.S. The threshold for success is commercial airplanes flying on 100% SAF by 2030. Boeing is connecting globally to advance sustainable aerospace. Boeing celebrated its 90th anniversary in Brazil at an inaugural summit with the Roundtable on Sustainable Materials and Brazilian-American Chamber of Commerce in São Paulo in September 2022. Boeing hosted a roundtable on sustainable aviation with IATA as part of Summit of the Americas in Los Angeles in June 2022. Boeing co-hosted a high-level SAF panel discussion in July 2022 in Sydney. Boeing participated at the 1st China Civil Aviation Green Development Forum, which was sponsored by CAAC and in the Annual Civil Aircraft Industry International Forum. Boeing hosted a two-day sustainability summit to celebrate a new research center opening in August 2022. At the Singapore Airshow, Boeing engaged with key industry and policy stakeholders to advocate for sustainable aviation initiatives and partnerships. Boeing organized a joint event with Ryanair in October 2022, engaging with members of the Parliament, media, industry and EU stakeholders about ongoing policies and regulations that contribute to accelerating SAF supply and use. Boeing joined NATO's first Industry Symposium on Climate Change and Capabilities, which brought together over 150 representatives from NATO Allies and industry. Participants discussed the military challenges of a climate changed world, navigating the energy transition and the national security opportunities of technologies like SAF. In Dublin, Boeing joined a panel on carbon offsetting and operational strategies for carbon reduction. Boeing supported and joined the launch event of the Power-to-Liquid roadmap led by the UAE government in July 2022. Boeing engaged government, industry, civil society partners and local and international media at COP27 in Egypt. At the Energy & Sustainability Forum MENA 2023, Boeing joined panel and discussed opportunities for alternative fuels, rising importance to diversify and build out low-carbon fuels and green chemical industry to create development opportunities.

C12.2

(C12.2) Do your suppliers have to meet climate-related requirements as part of your organization's purchasing process?

No, but we plan to introduce climate-related requirements within the next two years

C12.3

(C12.3) Does your organization engage in activities that could either directly or indirectly influence policy, law, or regulation that may impact the climate?

Row 1

External engagement activities that could directly or indirectly influence policy, law, or regulation that may impact the climate

Yes, we engage directly with policy makers

Yes, our membership of/engagement with trade associations could influence policy, law, or regulation that may impact the climate

Yes, we fund organizations or individuals whose activities could influence policy, law, or regulation that may impact the climate

Does your organization have a public commitment or position statement to conduct your engagement activities in line with the goals of the Paris Agreement?

Yes

Attach commitment or position statement(s)

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Describe the process(es) your organization has in place to ensure that your external engagement activities are consistent with your climate commitments and/or climate transition plan

The Board's Governance & Public Policy Committee oversees the Company's public policy, political advocacy and corporate sustainability practices — including matters related to environmental stewardship and climate change, as well as diversity, equity and inclusion. In addition, Boeing established the Global Sustainability Policy & Partnership (GSPP) team consisting of senior leaders from across Boeing who lead our climate policies, build partnerships, and advance progress towards decarbonizing aerospace. Together, the Board, the GPP Committee and senior leadership, are committed to ensuring that our political activities align with the company's values, business strategies, long-term shareholder interests and long-term strategic imperatives. The Board works closely with the Executive Vice President (EVP) of Government Operations on the oversight of our engagement in the political process. This includes regular discussions about the company's public policy priorities; the company's memberships in and payments to trade associations and other tax-exempt organizations; Boeing Political Action Committee (BPAC) strategy and expenditures; and the company's network of compliance procedures related to these activities. The GPP Committee leads the oversight activities on these issues and makes appropriate recommendations to the full Board about Boeing's engagement in the political process. Boeing's Government Operations team closely monitors our memberships in trade associations and support of think tanks, including a review of any advocacy undertaken by such third-party groups, to ensure continued overall alignment with Boeing's interests, business strategy, and values. For example, if a trade association takes a differing view point, Boeing will first attempt to find compromise, and if that effort is unsuccessful, work with other member companies to push back against the position. If the association does not change course, Boeing publicly and consistently clarifies that the position in question does not reflect the company's views, and Boeing's continued membership of the organization is assessed.

Primary reason for not engaging in activities that could directly or indirectly influence policy, law, or regulation that may impact the climate

<Not Applicable>

Explain why your organization does not engage in activities that could directly or indirectly influence policy, law, or regulation that may impact the climate

<Not Applicable>

C12.3a

(C12.3a) On what policy, law, or regulation that may impact the climate has your organization been engaging directly with policy makers in the reporting year?

Specify the policy, law, or regulation on which your organization is engaging with policy makers

Support development of US rule in alignment with international standards as agreed to by United Nations organization. Details of engagement: Engaged with representatives of US Government (Administration and Congress) advocating for completion of the aircraft CO2 emissions regulation as agreed by the International Civil Aviation Organization (ICAO). We met with government officials and filed a public response in the docket to an EPA Notice of Proposed Rule Making fully articulating this position. Adopt CO2 emission standards for commercial aircraft consistent with International Civil Aviation Organization (ICAO).

Category of policy, law, or regulation that may impact the climate

Climate change mitigation

Focus area of policy, law, or regulation that may impact the climate

Please select

Policy, law, or regulation geographic coverage

National

Country/area/region the policy, law, or regulation applies to

United States of America

Your organization's position on the policy, law, or regulation

Support with no exceptions

Description of engagement with policy makers

We met with government officials in support of this rulemaking.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

<Not Applicable>

Have you evaluated whether your organization's engagement on this policy, law, or regulation is aligned with the goals of the Paris Agreement?

No, we have not evaluated

Please explain whether this policy, law or regulation is central to the achievement of your climate transition plan and, if so, how?

<Not Applicable>

Specify the policy, law, or regulation on which your organization is engaging with policy makers

US Blenders Tax Credit, Renewable Fuel Standards and Sustainable Aviation Fuels, Sustainable Skies Act of 2021, CLEEN and Sustainable Aviation Fuels, Green Aviation Infrastructure

Category of policy, law, or regulation that may impact the climate

Low-carbon products and services

Focus area of policy, law, or regulation that may impact the climate

Low-carbon innovation and R&D

Policy, law, or regulation geographic coverage

National

Country/area/region the policy, law, or regulation applies to

United States of America

Your organization's position on the policy, law, or regulation

Support with minor exceptions

Description of engagement with policy makers

Engaged with policy makers regarding consideration of sustainable aviation fuels

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

Boeing supports the objectives of the Paris Agreement and consider climate change to be an urgent issue. We demonstrate the importance of climate considerations to the company by aligning our governance, strategy, risk management metrics and targets to the TCFD core elements.

Have you evaluated whether your organization's engagement on this policy, law, or regulation is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Please explain whether this policy, law or regulation is central to the achievement of your climate transition plan and, if so, how?

<Not Applicable>

Specify the policy, law, or regulation on which your organization is engaging with policy makers

Washington State Climate Commitment Act

Category of policy, law, or regulation that may impact the climate

Climate change mitigation

Focus area of policy, law, or regulation that may impact the climate

Emissions – CO2

Policy, law, or regulation geographic coverage

Regional

Country/area/region the policy, law, or regulation applies to

United States of America

Your organization's position on the policy, law, or regulation

Neutral

Description of engagement with policy makers

Engage with policy makers on need for equitable solutions for energy intensive industries to reduce emissions towards goals while allowing a competitive market and preventing leakage of manufacturing to other jurisdictions, which could increase emissions globally.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

<Not Applicable>

Have you evaluated whether your organization's engagement on this policy, law, or regulation is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Please explain whether this policy, law or regulation is central to the achievement of your climate transition plan and, if so, how?

<Not Applicable>

Specify the policy, law, or regulation on which your organization is engaging with policy makers

US EPA rulemaking on HFC phase-down

Category of policy, law, or regulation that may impact the climate

Climate change mitigation

Focus area of policy, law, or regulation that may impact the climate

Climate-related reporting

Climate-related targets

Policy, law, or regulation geographic coverage

National

Country/area/region the policy, law, or regulation applies to

United States of America

Your organization's position on the policy, law, or regulation

Support with minor exceptions

Description of engagement with policy makers

Engage with policy makers on aerospace critical uses, status of alternative technology development and compliance schedules.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

Boeing commented on the need for aerospace critical uses to allow additional time for development of alternative technology development and time to for regulatory certification and approval of the alternatives. Boeing supports the objectives of the Paris Agreement and consider climate change to be an urgent issue. We demonstrate the importance of climate considerations to the company by aligning our governance, strategy, risk management metrics and targets to the TCFD core elements.

Have you evaluated whether your organization's engagement on this policy, law, or regulation is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Please explain whether this policy, law or regulation is central to the achievement of your climate transition plan and, if so, how?

<Not Applicable>

Specify the policy, law, or regulation on which your organization is engaging with policy makers

Biden Administration Climate Agenda

Category of policy, law, or regulation that may impact the climate

Climate change mitigation

Focus area of policy, law, or regulation that may impact the climate

Climate-related reporting

Climate-related targets

Renewable energy generation

Policy, law, or regulation geographic coverage

National

Country/area/region the policy, law, or regulation applies to

United States of America

Your organization's position on the policy, law, or regulation

Neutral

Description of engagement with policy makers

Engage with policy makers on numerous Biden Administration climate related policies including: •Responding to climate change impacts (resiliency) •Reducing risk and emissions (mitigation) •Expanding renewable energy. Engagements included: •Supporting low-emissions transportation •Consideration of climate change & risks in agency decisions Engagements include advancing policies in support of sustainable aviation fuels initiatives such as the First Movers Coalition and Sustainable Aviation Fuels Buyers Alliance.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

<Not Applicable>

Have you evaluated whether your organization's engagement on this policy, law, or regulation is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Please explain whether this policy, law or regulation is central to the achievement of your climate transition plan and, if so, how?

<Not Applicable>

C12.3b

(C12.3b) Provide details of the trade associations your organization is a member of, or engages with, which are likely to take a position on any policy, law or regulation that may impact the climate.

Trade association

Business Roundtable

Is your organization's position on climate change policy consistent with theirs?

Mixed

Has your organization attempted to influence their position in the reporting year?

Yes, we attempted to influence them but they did not change their position

Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position

Business Roundtable states: "Addressing climate change and its impacts demands a robust, coordinated effort with a sound policy portfolio. Business Roundtable CEOs are calling for a well-designed market-based mechanism and other supporting policies to provide certainty and unleash innovation to lift America toward a cleaner, brighter future" For more information, see: <https://www.businessroundtable.org/climate>

Boeing supports the objectives of the Paris Agreement and considers climate change to be an urgent issue. Boeing maintains memberships in numerous organizations and engages on a diverse set of topics that relate to our business, our supply chain, our customers, and our communities. Boeing's Government Operations team closely monitors our memberships in trade associations and support of think tanks, including a review of any advocacy undertaken by such third-party groups, to ensure continued overall alignment with Boeing's interests, business strategy, and values. For example, if a trade association takes a differing view point, Boeing will first attempt to find compromise, and if that effort is unsuccessful, work with other member companies to push back against the position. If the association does not change course, Boeing publicly and consistently clarifies that the position in question does not reflect the company's views, and Boeing's continued membership of the organization is assessed.

We welcome debate and discussion on topics that are relevant to us and our stakeholders and look for the opportunity to provide our perspectives on many policy topics. Boeing publicly discloses our memberships in trade associations at https://www.boeing.com/resources/boeingdotcom/company/key_orgs/pdf/Trade-Association-Disclosure-2022.pdf

Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)

Describe the aim of your organization's funding

<Not Applicable>

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

No, we have not evaluated

Trade association

International Air Transport Association

Is your organization's position on climate change policy consistent with theirs?

Consistent

Has your organization attempted to influence their position in the reporting year?

Yes, we publicly promoted their current position

Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position

The International Air Transport Association's (IATA) commitment to climate is as follows: "Fly Net Zero is the commitment of airlines to achieve net zero carbon by 2050. At the 77th IATA Annual General Meeting in Boston, USA, on 4 October 2021, a resolution was passed by IATA member airlines committing them to achieving net-zero carbon emissions from their operations by 2050. This pledge brings air transport in line with the objectives of the Paris agreement to limit global warming to 1.5°C. To succeed, it will require the coordinated efforts of the aviation, services and manufacturing sectors (airlines, airports, air navigation service providers, manufacturers) and significant

government support. Read the press release: "IATA members' AGM resolution on Net Zero 2050." For more information, see; <https://www.iata.org/en/programs/environment/flynetzero/>

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Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)

Describe the aim of your organization's funding

<Not Applicable>

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Trade association

US Chamber of Commerce

Is your organization's position on climate change policy consistent with theirs?

Mixed

Has your organization attempted to influence their position in the reporting year?

Yes, we attempted to influence them but they did not change their position

Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position

The U.S. Chamber of Commerce's position on climate is stated as follows: "Combating climate change requires citizens, governments, and businesses to work together. Inaction is simply not an option. American businesses play a vital role in creating innovative solutions and reducing greenhouse gases to protect our planet. A challenge of this magnitude requires collaboration, not confrontation, to advance the best ideas and policies. Together, we can forge solutions that improve our environment and grow our economy—leaving the world better for generations to come." For more information, see: <https://www.uschamber.com/climate-change>

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Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)

Describe the aim of your organization's funding

<Not Applicable>

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

No, we have not evaluated

Trade association

Other, please specify (Washington Business Alliance)

Is your organization's position on climate change policy consistent with theirs?

Mixed

Has your organization attempted to influence their position in the reporting year?

No, we did not attempt to influence their position

Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position

The Association of Washington Business has published legislative objectives—guiding principles for policy—related to climate and energy, published at <https://www.awb.org/government-affairs/legislativeobjectives/climate-change/>

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Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)

Describe the aim of your organization's funding

<Not Applicable>

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

No, we have not evaluated

Trade association

Other, please specify (Aerospace Industries Association)

Is your organization's position on climate change policy consistent with theirs?

Mixed

Has your organization attempted to influence their position in the reporting year?

Yes, we attempted to influence them but they did not change their position

Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position

The Aerospace Industries Association's Principles to Build on Aviation Manufacturers' Climate Commitments can be found at <https://www.aia-aerospace.org/issues/environment>

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Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)**Describe the aim of your organization's funding**

<Not Applicable>

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

No, we have not evaluated

Trade association

Business Council of Australia

Is your organization's position on climate change policy consistent with theirs?

Mixed

Has your organization attempted to influence their position in the reporting year?

No, we did not attempt to influence their position

Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position

The Business Council of Australia states: "For over a decade we have supported strong action on climate change: We support the science of climate change. We support the Paris Agreement and transitioning to net-zero emissions by 2050. If we can meet our emissions reduction targets without carryover credits then we should. We support the need for a market-based carbon price to drive the transition and incentivise investment in low and no-emissions technology. Technology needs to drive the transition which will not only get us to a net-zero emissions future but will also create new jobs, opportunities and industries and maintain Australia's competitiveness..... Today, we continue to advocate for policies that reduce Australia's carbon emissions and deliver the more carbon efficient economy Australians and our members want." For more info, see: https://www.bca.com.au/energy_and_climate

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Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)**Describe the aim of your organization's funding**

<Not Applicable>

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

No, we have not evaluated

Trade association

National Association of Manufacturers

Is your organization's position on climate change policy consistent with theirs?

Mixed

Has your organization attempted to influence their position in the reporting year?

Yes, we attempted to influence them but they did not change their position

Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position

The National Association of Manufacturers (NAM) climate policy blueprint states: "The time for bold climate action is now. Manufacturers are committed to acting responsibly in helping to maintain a clean and prosperous environment. We owe this to the people and communities we serve, to our customers across the globe and to the millions of men and women who make things in America. We have made great strides as a nation to reduce the emissions that cause climate change. However, we have done so in spite of the policies set by Washington, not because of them. We're calling for action. And with this plan, we are providing a road map. Why? Because manufacturing holds the key to solving this global challenge. Think about the technologies that will get us there. Clean energy. Carbon capture. Batteries. Microgrids. Efficiency. Advanced vehicles. Manufacturers make these products and technologies and will continue to invent new ones. Confronting climate change will not be easy. But it is neither the first nor the last challenge that manufacturing ingenuity will solve.." See: <https://www.nam.org/wp-content/uploads/2021/01/The-Promise-Ahead.pdf>

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Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)

Describe the aim of your organization's funding

<Not Applicable>

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

No, we have not evaluated

Trade association

Other, please specify (Airlines for Europe)

Is your organization's position on climate change policy consistent with theirs?

Consistent

Has your organization attempted to influence their position in the reporting year?

Yes, we publicly promoted their current position

Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position

Airlines for Europe states that: "Europe's airlines have committed to decarbonize air transport and accelerate their efforts to make Europe the world's first carbon neutral continent by 2050 through the reduction of carbon emissions in absolute terms, and through CO2 mitigation. [...] There is no panacea for reducing greenhouse gas emissions; the solutions will vary with geography, economics, and demand. The Destination 2050 roadmap shows a decarbonisation pathway that combines new technologies, improved operations, sustainable aviation fuels and smart economic measures in achieving net zero CO2 emissions from European aviation by 2050. A4E members want to be part of the fight against climate change. It is a challenge we face head-on, and one we will only achieve through integrated, cross-sector efforts across policy fields: transport, climate, energy and research. The solution is not to fly less, but to fly more efficiently and more sustainably. A4E airlines look forward to this future." For more info, see: <https://a4e.eu/policies/sustainability/>

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Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)

Describe the aim of your organization's funding

<Not Applicable>

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

No, we have not evaluated

Trade association

Other, please specify (Air Transport Aviation Group)

Is your organization's position on climate change policy consistent with theirs?

Consistent

Has your organization attempted to influence their position in the reporting year?

Yes, we publicly promoted their current position

Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position

The Air Transport Aviation Group states: "Scientific consensus shows that the Paris Agreement 1.5°C goal would greatly reduce the severity of climate change damage. [...] The collective air transport sector raises its ambition with a new long-term climate commitment: Global civil aviation operations will achieve net-zero carbon emissions by 2050, supported by accelerated efficiency measures, energy transition and innovation across the aviation sector and in partnership with governments around the world. [...] The goal will be underpinned by a commitment to joint and cooperative action between all stakeholders. Waypoint 2050 outlines a number of key elements to achieve the decarbonisation of air transport, including: 1. Increasing use of sustainable aviation fuels (SAF) and a transition away from fossil fuels by mid-century as part of a wider aviation energy shift including low-carbon electricity and green hydrogen. 2. Research, development and deployment of evolutionary and revolutionary airframe and propulsion systems, including the introduction of electric and / or hydrogen powered aircraft. 3. Continued improvements in efficiency of operations and infrastructure across the system, including at airports and by air navigation service providers. 4. Investment in high-quality carbon offsets in the near-term and carbon removal opportunities to address residual CO2 emissions in the longer-term. In this regard, the industry reaffirms its full support for the International Civil Aviation Organization (ICAO) Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) as an effective transitional measure to stabilise net emissions from international aviation." For more info, see: <https://aviationbenefits.org/media/167501/atag-net-zero-2050-declaration.pdf>

Boeing supports the objectives of the Paris Agreement and considers climate change to be an urgent issue. Boeing maintains memberships in numerous organizations and engage on a diverse set of topics that relate to our business, our supply chain, our customers, and our communities overall. We welcome debate and discussion on topics that are relevant to us and our stakeholders and look for the opportunity to provide our perspectives on many policy topics. Boeing publicly discloses our memberships in trade associations at https://www.boeing.com/resources/boeingdotcom/company/key_orgs/pdf/Trade-Association-Disclosure-2022.pdf.

Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)

Describe the aim of your organization's funding

<Not Applicable>

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

C12.3c

(C12.3c) Provide details of the funding you provided to other organizations or individuals in the reporting year whose activities could influence policy, law, or regulation that may impact the climate.

Type of organization or individual

Trust or foundation

State the organization or individual to which you provided funding

The Trust for Public Land (TPL)

Funding figure your organization provided to this organization or individual in the reporting year (currency as selected in C0.4)

195000

Describe the aim of this funding and how it could influence policy, law or regulation that may impact the climate

TPL states: "Climate: Communities need real-world solutions to the climate crisis. We can help. In our nearly five decades of helping communities, we've developed time-tested, cost-effective solutions for using parks and public land to counter climate challenges: •We've provided 100 cities, home to 25 million people, with climate-smart insight and tools to identify where parks and public land would have the greatest impact. •We've implemented hundreds of on-the-ground projects to reduce urban heat, manage intense rainfall, and protect natural carbon stocks. •We've protected 3.6 million acres of land, including 700,000 acres of floodplain and coasts, that store 141 million tons of carbon [...] •And we've engaged voters and decision makers to deliver nature-based climate action, driving policy innovation and billions of dollars in state and local conservation funding that more than double our direct impact." See: <https://www.tpl.org/our-commitments/climate> The aim of Boeing's philanthropic funding is to help to advance TPL's initiatives in alignment with Boeing's Global Engagement pillars: Our Commitment to Our Future, Our Heroes, and Our Homes, as amplified by our employees and our partners. Boeing partners with The Trust for Public Lands on a wide variety of environmental conservation, restoration, educational activities including a focus on water quality and urban greenspace. In 2021, we partnered on a project that involved preparing future STEM leaders, striving towards racial equity by supporting underserved communities, and working to improve the environment around us. In addition, given a shared passion for the environment, Boeing partnered with TPL in 2021 to recognize outstanding environmental volunteers in Arizona, California, Oregon, and Washington. Working hand in hand with our community partners, Boeing lends our expertise and resources to address pressing needs in communities across the globe. In our pursuit of a better world, we leverage our partners' collective knowledge, creativity and resources in order to achieve greater impact than any of us is able to accomplish alone. We are partners in change, moving our communities and our society forward, together. Boeing's goal is to strengthen the communities where our employees live and work. By applying sustainable solutions to local challenges, such as environmental restoration efforts in the Puget Sound region—Boeing can more quickly and effectively respond to the needs of local communities.

Have you evaluated whether this funding is aligned with the goals of the Paris Agreement?

No, we have not evaluated

Type of organization or individual

Non-Governmental Organization (NGO) or charitable organization

State the organization or individual to which you provided funding

The Nature Conservancy (TNC)

Funding figure your organization provided to this organization or individual in the reporting year (currency as selected in C0.4)

175000

Describe the aim of this funding and how it could influence policy, law or regulation that may impact the climate

"The science is clear: We must act now to halt catastrophic climate change and biodiversity loss. What we do between now and 2030 will determine whether we slow warming to 1.5 degrees Celsius—the level scientists agree will avoid the worst impacts of climate change. [...] The Nature Conservancy's Goals for 2030 Our approach reflects decades of learning and refining, and the special role TNC can play side-by-side with partners, communities and decision-makers across the globe: 1. Carbon Emissions: Reduce or store 3 gigatons of CO2 emissions yearly[...] 2. Helping People: Benefit 100 million people[...] 3. Our Ocean: Conserve nearly 10 billion acres of ocean[...] 4. Healthy Lands: Conserve 1.6 billion acres of land[...] 5. Freshwater: Conserve more than 620,000 miles of rivers[...] 6. Local Leaders: Support 45 million local stewards[...]" See: <https://www.nature.org/en-us/what-we-do/our-priorities/> The aim of Boeing's philanthropic funding is to help to advance TNC's initiatives in alignment with Boeing's Global Engagement pillars: Our Commitment to Our Future, Our Heroes, and Our Homes, amplified by our employees and our partners. Boeing partners with The Nature Conservancy on a wide variety of environmental conservation and restoration activities including forest preservation and restoration, floodplain protection, coastal restoration and water quality issues to protect salmon and orcas. Boeing is committed to making positive sustainability impacts across our business and through partnerships with environmental organizations around the world. Working hand in hand with our community partners, Boeing lends our expertise and resources to address pressing needs in communities across the globe. In our pursuit of a better world, we leverage our partners' collective knowledge, creativity and resources in order to achieve greater impact than any of us is able to accomplish alone. We are partners in change, moving our communities and our society forward, together. Boeing's goal is to strengthen the communities where our employees live and work. By applying sustainable solutions to local challenges, such as environmental restoration efforts in the Puget Sound region—Boeing can more quickly and effectively respond to the needs of local communities.

Have you evaluated whether this funding is aligned with the goals of the Paris Agreement?

No, we have not evaluated

C12.4

(C12.4) Have you published information about your organization’s response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication

In other regulatory filings

Status

Complete

Attach the document

boeing-2022-annual-reportvF.pdf

Page/Section reference

Risks Related to Legal and Regulatory Matters, starting on 10-K p. 14; Selected Programs, Products and Services, starting on p. 136

Content elements

Risks & opportunities
Other, please specify (10-K)

Comment

The emissions reductions / improvements associated with various products and services are listed.

Publication

In voluntary sustainability report

Status

Complete

Attach the document

ghg_emissions_and_waterwithdrawal_assurance_statement_2022.pdf
2023-Boeing-Sustainability-Report.pdf

Page/Section reference

Throughout

Content elements

Governance
Strategy
Emissions figures
Emission targets
Other metrics

Comment

Includes a TCFD index on p. 93

C12.5

(C12.5) Indicate the collaborative frameworks, initiatives and/or commitments related to environmental issues for which you are a signatory/member.

	Environmental collaborative framework, initiative and/or commitment	Describe your organization’s role within each framework, initiative and/or commitment
Row 1	Climate Action 100+ Other, please specify (European Commission’s Renewable and Low-Carbon Fuels Value Chain Industrial Alliance)	<p>Boeing became a member of the European Commission’s Renewable and Low-Carbon Fuels Value Chain Industrial Alliance. As part of the Aviation Working Group, Boeing is partnering with the European policymakers to inform how to scale production and uptake of SAF. In 2022, Boeing also took the lead as Sector Champion for Aviation in the World Economic Forum’s First Movers Coalition (FMC), which has assembled 24 of the world’s leading companies. All airlines and air transport companies in this sector have set a target to procure 5% of their fuel demand as advanced SAF. The group works to overcome technology barriers and bring forward supply with the intent of striking binding commitments between buyers and sellers.</p> <p>Boeing also chaired the SAF Alliance of Australia and New Zealand to make key policy recommendations on scaling SAF.</p> <p>Boeing joined the International Advisory Panel (IAP) set up by the Civil Aviation Authority of Singapore to develop Singapore Sustainable Air Hub Blueprint by 2023.</p> <p>Boeing hosted the seventh Jet Zero Council meeting in its offices, presenting its Cascade tool to the UK’s Secretary of State for Transport and Secretary of State for Energy and Net Zero. The work of the council is crucial for the UK Jet Zero Strategy. Boeing was appointed co-chair of the Defence Supplier Forum Climate Change and Sustainability Aviation Group with the Royal Air Force. Boeing also leads a NATO group on behalf of the UK focused on accelerating military adoption of SAF to support defense sustainability and energy security.</p> <p>Other select memberships & partnerships, too voluminous to list here, are shown on p. 98 of Boeing’s 2023 Sustainability Report</p>

C15. Biodiversity

C15.1

(C15.1) Is there board-level oversight and/or executive management-level responsibility for biodiversity-related issues within your organization?

	Board-level oversight and/or executive management-level responsibility for biodiversity-related issues	Description of oversight and objectives relating to biodiversity	Scope of board-level oversight
Row 1	Yes, both board-level oversight and executive management-level responsibility	Biodiversity is included under the broader sustainability responsibilities of the Board of Directors Governance and Public Policy Committee. Boeing's Environmental Policy includes four elements, one of which is to work together with our stakeholders on activities that promote environmental protection and stewardship. This policy guides all employees, with ultimate responsibility at the CEO level. Boeing's Chief Sustainability Officer (CSO), Chris Raymond, is an Executive Council member reporting to Boeing's CEO. As CSO, Raymond reports the progress of Boeing's sustainability objectives and stakeholder-oriented reports regularly to the GPP Committee and the full Board.	<Not Applicable>

C15.2

(C15.2) Has your organization made a public commitment and/or endorsed any initiatives related to biodiversity?

	Indicate whether your organization made a public commitment or endorsed any initiatives related to biodiversity	Biodiversity-related public commitments	Initiatives endorsed
Row 1	Yes, we have endorsed initiatives only	<Not Applicable>	SDG Other, please specify (Roundtable on Sustainable Biomaterials (Principle 7; World Conservation Union: IUCN Category I-IV); Wetlands of International Importance; UNESCO World Heritage Sites and Biosphere Reserves; Key Biodiversity Areas under the IBAT for Business Tool.)

C15.3

(C15.3) Does your organization assess the impacts and dependencies of its value chain on biodiversity?

Impacts on biodiversity

Indicate whether your organization undertakes this type of assessment

Yes

Value chain stage(s) covered

Direct operations

Portfolio activity

<Not Applicable>

Tools and methods to assess impacts and/or dependencies on biodiversity

ENCORE tool
SBTN materiality tool
TNFD – Taskforce on Nature-related Financial Disclosures
Other, please specify

Please explain how the tools and methods are implemented and provide an indication of the associated outcome(s)

In addition to the ENCORE, TNFD, and SBTN tools, we are using the WWF Risk Filter to assess relationships with biodiversity.

Dependencies on biodiversity

Indicate whether your organization undertakes this type of assessment

Yes

Value chain stage(s) covered

Direct operations

Portfolio activity

<Not Applicable>

Tools and methods to assess impacts and/or dependencies on biodiversity

ENCORE tool
SBTN materiality tool
TNFD – Taskforce on Nature-related Financial Disclosures

Please explain how the tools and methods are implemented and provide an indication of the associated outcome(s)

In addition to the ENCORE, TNFD, and SBTN tools, we are using the WWF Risk Filter to assess relationships with biodiversity.

C15.4

(C15.4) Does your organization have activities located in or near to biodiversity-sensitive areas in the reporting year?

Not assessed

C15.5

(C15.5) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?

	Have you taken any actions in the reporting period to progress your biodiversity-related commitments?	Type of action taken to progress biodiversity-related commitments
Row 1	No, we are not taking any actions to progress our biodiversity-related commitments, but we plan to within the next two years	<Not Applicable>

C15.6

(C15.6) Does your organization use biodiversity indicators to monitor performance across its activities?

	Does your organization use indicators to monitor biodiversity performance?	Indicators used to monitor biodiversity performance
Row 1	Yes, we use indicators	Pressure indicators Response indicators

C15.7

(C15.7) Have you published information about your organization's response to biodiversity-related issues for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Report type	Content elements	Attach the document and indicate where in the document the relevant biodiversity information is located
In voluntary sustainability report or other voluntary communications	Governance Details on biodiversity indicators	
In voluntary sustainability report or other voluntary communications	Governance Details on biodiversity indicators	

C16. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

Thank you.

C16.1

(C16.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Vice President of Global Environmental Sustainability	Chief Sustainability Officer (CSO)

SC. Supply chain module

SC0.0

(SC0.0) If you would like to do so, please provide a separate introduction to this module.

As a leading global aerospace company, Boeing develops, manufactures and services commercial airplanes, defense products and space systems for customers in more than 150 countries. As a top U.S. exporter, the company leverages the talent of a global supplier base to advance economic opportunity, sustainability and community impact. Boeing's diverse team is committed to innovating for the future and living the company's core values of safety, quality and integrity.

SC0.1

(SC0.1) What is your company's annual revenue for the stated reporting period?

	Annual Revenue
Row 1	67000000000

SC1.1

(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.

SC1.2

(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).

SC1.3

(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?

Allocation challenges	Please explain what would help you overcome these challenges
Diversity of product lines makes accurately accounting for each product/product line cost ineffective	Due to the diversity of our products, the proprietary nature of our business, and the classified status of many of our programs, we are still looking for a better allocation methodology for our customers. We are open to working more closely with our customers and the aerospace industry to develop a common approach for allocating emissions to customers. We disclose our GHG inventory at the company and country level through CDP and the Boeing Environment report.

SC1.4

(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?

Yes

SC1.4a

(SC1.4a) Describe how you plan to develop your capabilities.

Boeing will continue to develop means for calculating customer specific information. We would welcome discussions with our customers to help develop standard approaches for such calculations that meet their needs.

We are exploring different options of allocation calculations

SC2.1

(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.

SC2.2

(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?

No

SC4.1

(SC4.1) Are you providing product level data for your organization's goods or services?

No, I am not providing data

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	I understand that my response will be shared with all requesting stakeholders	Response permission
Please select your submission options	Yes	Public

Please confirm below

I have read and accept the applicable Terms