

C0. Introduction

C0.1

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

Spirit AeroSystems (“Spirit”) is one of the largest independent non-original equipment manufacturers (“OEMs”) of commercial aerostructures in the world. We design, engineer, and manufacture large, complex, and highly engineered commercial aerostructures such as fuselages, nacelles (including thrust reversers), struts/pylons, wing structures, and flight control surfaces. In addition to supplying commercial aircraft structures, we also design, engineer, and manufacture structural components for military aircraft and other applications.

Our corporate headquarters are located in in Wichita, Kansas. We operate in three principal segments: Fuselage Systems, Propulsion Systems, and Wing Systems. Our largest customer, The Boeing Company (“Boeing”), represents a substantial portion of our revenues in all segments. Further, our second largest customer, Airbus S.A.S., a division of Airbus Group SE (“Airbus”), represents a substantial portion of revenues in the Wing Systems segment.

FORWARD LOOKING STATEMENTS: Certain statements contained in this CDP 2020 Climate Change disclosure may be considered “forward-looking statements” that may involve risks and uncertainties. Forward-looking statements generally can be identified by the use of forward-looking terminology such as “aim,” “anticipate,” “believe,” “could,” “continue,” “estimate,” “expect,” “goal,” “forecast,” “intend,” “may,” “might,” “objective,” “outlook,” “plan,” “predict,” “project,” “should,” “target,” “will,” “would,” and other similar words, or phrases, or the negative thereof, unless the context requires otherwise. These statements reflect management’s current views with respect to future events and are subject to risks and uncertainties, both known and unknown. Our actual results may vary materially from those anticipated in forward-looking statements. We caution investors not to place undue reliance on any forward-looking statements.

Important factors that could cause actual results to differ materially from those reflected in such forward-looking statements and that should be considered in evaluating our outlook include, but are not limited to, the following: (1) the timing and conditions surrounding the return to service of the B737 MAX, future demand for the aircraft, and any residual impacts of the grounding on production rates for the aircraft; (2) our reliance on Boeing for a significant portion of our revenues; (3) our ability to continue to grow our business and execute our growth strategy including our ability to enter into profitable supply arrangements with additional customers; (4) the business condition and liquidity of Boeing and Airbus and their ability to satisfy their contractual obligations to the Company; (5) demand for our products and services and the effect of economic or geopolitical conditions, or other events, such as pandemics, in the industries and markets in which we operate in the U.S. and globally; (6) the impact of the COVID-19 pandemic on our business and operations, including on the demand for our and our customers’ products and services, on trade and transport restrictions, on the global aerospace supply chain, on our ability to retain the skilled work force necessary for production and development and generally on our ability to effectively manage the impacts of the COVID-19 pandemic on our business operations; (7) the certainty of our backlog, including the ability of customers to cancel or delay orders prior to shipment; (8) our ability to accurately estimate and manage performance, cost, margins, and revenue under our contracts, and the potential for additional forward losses on new and maturing programs; (9) our ability and our suppliers’ ability to accommodate, and the cost of accommodating, increases in the build rates of certain aircraft; and (10) competitive conditions in the markets in which we operate, including in-sourcing by commercial aerospace original equipment manufacturers.

These factors are not exhaustive and it is not possible for us to predict all factors that could cause actual results to differ materially from those reflected in our forward-looking statements. These factors speak only as of the date hereof, and new factors may emerge or changes to the foregoing factors may occur that could impact our business. As with any projection or forecast, these statements are inherently susceptible to uncertainty and changes in circumstances. Except to the extent required by law, we undertake no obligation to, and expressly disclaim any obligation to, publicly update or revise any forward-looking statements, whether as a result of new information, future events, or otherwise. You should review carefully the section captioned “Risk Factors” in the Company’s Annual Report on Form 10-K and the Company’s Quarterly Reports on Form 10-Q for a more complete discussion of these and other factors that may affect our business.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	January 1 2019	December 31 2019	No	<Not Applicable>

C0.3

(C0.3) Select the countries/areas for which you will be supplying data.

- France
- Malaysia
- United Kingdom of Great Britain and Northern Ireland
- United States of America

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

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(s)	Please explain
Chief Executive Officer (CEO)	The highest level of responsibility within Spirit AeroSystems Inc. for the management of climate-related issues is held by our Chief Executive Officer who serves on our Company's Board of Directors. Our Chief Executive Officer's responsibilities include guiding and approving Spirit's climate-related strategy, which encompasses our operational efficiency, strategic sourcing and product innovation initiatives. In 2020, he also began to receive formal updates on ESG matters on a quarterly basis. He also receives real-time updates on progress toward execution milestones for our climate and broader ESG objectives. Additional oversight is provided by the Board's Audit, Risk and Corporate Governance Committees through Spirit's standard processes. The Audit Committee collaborates with the Risk Committee to oversee financial-related risk exposures – including but not limited to those which may be associated with climate change. The Audit Committee also oversees related policies and processes attempting to mitigate such financial-related risk exposures. The Risk Committee is responsible for overseeing and mitigating enterprise-level risks, including strategic and operational.

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	<p>Reviewing and guiding strategy</p> <p>Reviewing and guiding major plans of action</p> <p>Reviewing and guiding risk management policies</p> <p>Monitoring implementation and performance of objectives</p> <p>Monitoring and overseeing progress against goals and targets for addressing climate-related issues</p>	<Not Applicable>	<p>Spirit's Board of Directors is responsible for overseeing the Company's strategy and performance, and protecting stakeholder interests and value. The Board is also responsible for selecting and overseeing the Company's executive officers, who set and execute the Company's business strategy and handle the Company's day-to-day operations. Specifically, the Board is responsible for overseeing the Company's risk exposure. The Board administers this responsibility through its review of corporate strategy and operations, and by delegating certain oversight responsibilities to the appropriate committees for further consideration and evaluation. The Board receives briefings from members of management on key strategic and operational risks during the July Board meeting and as the other committees deem necessary in their Board reports. The Board also reviews Spirit's strategic objectives on an annual basis and regularly receives updates on key strategic and operational risks to the enterprise via the Risk Committee on a quarterly basis. The Board's Audit and Risk Committee receive regular reports from senior management detailing areas of risk and management and mitigation strategies with respect to such risks. Risks covered in these reports may include those associated with climate change, as appropriate and relevant to other top enterprise risks. Additionally, our President and Chief Executive Officer serves on the Board. He receives quarterly briefings related to climate risks and broader ESG matters from Spirit's Senior Director of EHS, Security and Sustainability. He also receives real-time updates on progress toward execution milestones for our climate and broader ESG objectives.</p>

C1.2

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

Name of the position(s) and/or committee(s)	Reporting line	Responsibility	Coverage of responsibility	Frequency of reporting to the board on climate-related issues
Chief Executive Officer (CEO)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

ORGANIZATIONAL STRUCTURE AND RESPONSIBILITIES: Our President and Chief Executive Officer is responsible for guiding and approving Spirit's climate-related strategy, which includes our operational efficiency, strategic sourcing and product innovation initiatives. Additional oversight is provided, as applicable, by Spirit's executive leaders including our Chief Financial Officer, and General Counsel, Chief Compliance Officer and Corporate Secretary.

Our Chief Operating Officer (COO) has overall responsibility for sustainability strategy and oversees Board engagement on climate-related issues. Spirit's leader of supply chain management, who reports up to the COO, is responsible for strategic sourcing initiatives to manage climate-risks, including the price of raw materials. Spirit's Senior Director of EHS, Security and Sustainability is responsible for overseeing and advancing Spirit's corporate-wide strategies and reporting with regards to climate, water, waste and other broader environmental, social and governance issues.

We also maintain dedicated EHS professionals and business continuity plans to manage climate-related risks. Each of our locations have a Site Crisis Management Plan, which defines team roles and responsibilities among the site manager, site business continuity coordinator, site crisis management team, business continuity teams and incident response team.

MONITORING OF CLIMATE-RELATED ISSUES: Methods to monitor climate-related issues include (1) participation in industry associations (including the Aerospace Industries Association, in which our President and Chief Executive Officer serves on its executive committee); (2) engagement with suppliers and customers; (3) utilization of ISO 14001 and 9001 management principles (pursuant to facility certifications); (3) biannual updates to corporate and site-specific Crisis Management Plans; and (4) targeted enterprise risk management procedures that are guided by Spirit's Enterprise Risk Management and Internal Audit functions.

MANAGEMENT'S ROLE: Our management is responsible for the identification, assessment, mitigation, and management of risks relating to the Company's strategy and operations, including those associated with climate change. Apart from reporting to the Board, management engages in a robust enterprise risk management process that involves: (i) semi-annual risk-assessment surveys and interviews; (ii) reviewing, repositioning, and prioritizing identified risks by Spirit's Risk Council, which is composed of executive leadership; (iii) assigning risks to risk owners based on responsibilities with respect to the Company's strategic objectives; (iv) developing and reporting mitigation plans by the risk owners and risk management team to the Risk Council; and (v) oversight by the Company's internal audit function.

BOARD REPORTING: On a quarterly basis, the status of the top risks identified in management's enterprise risk management process, along with their associated mitigation plans, are presented to the Risk Committee.

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	Spirit has dedicated staff that are focused on advancing our climate strategies, and driving reductions in our environmental footprint.

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	Type of incentive	Activity incentivized	Comment
Environment/Sustainability manager	Please select	Other (please specify)	Part of the annual objectives for our Senior Director of EHS, Security and Sustainability is to oversee and advance Spirit's corporate strategies and reporting with regards to climate, water, waste and other broader environmental, social and governance issues. Please note that these types of objectives are considered in performance evaluations and may or may not be reflected in bonuses or short-term 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	1	2	We consider the 1-2 year time horizon when defining short-term objectives and monitoring near-term climate-related risks and opportunities.
Medium-term	3	5	We consider the 3-5 year time horizon when defining medium-term objectives (including emissions reduction targets). We also consider the 3-5 year time horizon when evaluating associated climate-related risks and opportunities from a medium-term time horizon.
Long-term	6	15	We consider the 6-15 year time horizon when defining long-term objectives (including strategies to support to the transition to a low carbon economy). We also consider the 6-15 year time horizon when evaluating associated climate-related risks and opportunities (notably those regarding sea level rise and broader socioeconomic impacts) from a long-term time horizon.

C2.1b

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

In our CDP 2020 Climate Change response, we define risk as having a substantial financial and strategic impact using both qualitative and quantitative measures.

QUALITATIVE THRESHOLDS: Qualitative measures consider correlations to our strategy, values and business model as an Original Equipment Manufacturer (OEM) supplier. Quantitatively, we generally consider a risk to be substantive based on a scenario where the potential financial impact could be in excess of \$10 million, which is approximately 2% of our 2019 net income.

QUALITATIVE FACTORS: The criteria used to determine our priorities with regards to climate change risks and opportunities is based on the degree of potential market, physical, regulatory, and/or operational impacts to Spirit AeroSystems. We also consider our value chain impacts, industry trends, and degree of stakeholder interest among customers, investors and employees.

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

COMPANY-LEVEL PROCESSES: At the company level, our President and CEO and executive leadership team maintain day-to-day strategic oversight to identify and manage risks related to climate change that may impact our company’s reputation, profitability, and access to capital. They are supported by Spirit’s Senior Director of EHS, Security and Sustainability, who is tasked with overseeing and advancing Spirit’s corporate strategies and reporting with regards to climate, water, waste and other broader environmental, social and governance issues. Key methods include (1) actively tracking our company’s performance within ESG assessment framework, (2) engaging with customers and suppliers, and (3) participating in industry initiatives to address climate change and other key issues facing the aerospace and defense industry. **ASSET-LEVEL PROCESSES:** At the asset level, Spirit has dedicated environmental professionals at our manufacturing facilities. They are tasked with (1) monitoring energy and emission performance and (2) identifying and executing on projects to reduce our operational environmental footprint. To manage and respond to physical climate risks (including extreme weather events), Spirit has developed Site Crisis Management Plans using ISO 22301, NIST SP 800-34 and NFPA 1600 standards for business continuity and disaster recovery. All of Spirit’s production facilities are either ISO 14001 and/or ISO 9001 certified. As part of the ISO certification process, we continue to assess our most significant environmental aspects at the factory-level, and develop action plans to ensure continuous improvement. **DECISION MAKING PROCESS:** The decision making process with regards to mitigation, transfer, accept and/or control of potential climate change risks and opportunities considers the following materiality-based factors: (i) greatest business impacts (e.g., those related to stakeholder interest and potential impacts to revenue, costs and capital expenditures), (ii) our degree of control; and (iii) the needs, concerns and key business drivers of our stakeholders. We consider all markets in which Spirit and/or our critical suppliers have a direct presence. We also consider global environmental and socioeconomic trends, which may impact our direct operations and broader aviation industry. We pay careful attention to our Wichita, Kansas operations, because this is the location of our corporate headquarters and it represents more than 75% of our 2019 square footage and Scope 1 and 2 emissions. **EXAMPLES:** As a result of these processes, we have prioritized the opportunity for Spirit to apply its distinctive capabilities to reduce carbon emissions throughout the entire life cycle of aircraft development, manufacturing, operations, and retirement. This opportunity is central to Spirit’s short-term, medium-term and long-term climate strategies. We also consider exposure to extreme weather events to be our most significant, near-term physical climate risk. As a result, we continue to invest in execution of our Corporate Crisis Management Plans, Emergency Operations Center and related business continuity plans and procedures, which includes Spirit’s Aviation Event Response Plan, Global IT Disaster Recovery Plan and Disaster Preparedness Plan.

C2.2a

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

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Spirit AeroSystems considers potential risks and opportunities associated with current regulation. Examples of the type of risks considered include regulations pertaining to energy efficiency, energy consumption reporting, and green building codes and standards. Our operations are subject to extensive regulation under environmental, health, and safety laws and regulations in the U.S. and other countries in which we operate. However, potential risks associated with current regulations associated with climate change are not considered to be substantive at this time.
Emerging regulation	Relevant, always included	Spirit AeroSystems considers potential risks and opportunities associated with emerging regulation. For example, increased concern over climate change has led to new and proposed legislative and regulatory initiatives. New or revised laws and regulations in this area could directly and indirectly affect the Company, its customers, or its suppliers by increasing production costs or otherwise impacting operations. Compliance with any new or more stringent laws or regulations, or stricter interpretations of existing laws, could require additional expenditures by the Company and could have an adverse effect on our business, financial condition, and results of operations.
Technology	Relevant, always included	Spirit AeroSystems considers potential technology risks and opportunities in the context of industry trends that might impact the aviation industry, and our ability to respond to needs our customers. Adopted by the International Air Transport Association (IATA), the aviation industry has set a target to reduce 2050 net emissions by 50% from 2005 levels. To deliver on this industry target, the aviation industry has identified technological innovation – specifically increased fuel-efficiency, light-weight planes, electrification, hybrid technologies – as a top priority. As the world's largest supplier of composite aerostructures – producing over 2.5 million pounds of composite structures each year, we are uniquely positioned to support low-carbon technological innovations. As such, we view technological shifts associated with the transition to a low carbon economy as an opportunity for our Company. Spirit AeroSystems is continually applying its distinctive capabilities to reduce carbon emissions throughout the entire life cycle of aircraft development, manufacturing, operations, and retirement. For example, Spirit was named a 2020 JEC Innovation Award Finalist for its Intelligent Resin Infusion System (IRIS™) technology, which enables up to 50% in energy savings compared to traditional autoclave curing of the composite material.
Legal	Relevant, always included	Our company's Legal department monitors relevant legal risks including those which may be associated with climate change and/or broader environmental, social, and governance issues. Examples of potential climate-related legal risks could include potential liabilities associated with our disclosures on emissions reduction strategies and performance. We do not believe that climate-related legal risks are currently substantive to our business.
Market	Relevant, always included	Spirit's Risk Council and strategic sourcing teams actively monitor market risks associated with climate change. Examples of potential climate-related market risks that are relevant to our company include (1) variability in the price of energy, fuel and raw materials – including titanium, aluminium, steel, and carbon fiber; and (2) broader potential socioeconomic impacts associated with climate).
Reputation	Relevant, always included	With CEO oversight, our Senior Director of EHS, Security and Sustainability is responsible for monitoring reputation risks associated with climate change. Examples of potential climate-related reputation risks that are relevant to our Company include those associated with access to capital as investors and lenders increasingly consider environmental, social, and governance (ESG) performance to inform decision making. In addition to considering Spirit's reputation, we also consider the overall reputation of the aviation industry. Currently, air transport only represents about 2% of global greenhouse gas emissions. However, long-term demand for air transport has been projected to increase by 4.3% per year for the next 20 years. While the industry projections suggest this growth will support 15.5 million jobs and add \$1.5 trillion in GDP to the global economy, industry growth is also expected to translate to a 300-700% increase in greenhouse gas emissions by 2050, according to the International Civil Aviation Organization (ICAO).
Acute physical	Relevant, always included	Acute physical risks are identified and assessed by our Business Continuity teams. Examples of acute physical risks that are relevant to our company include hurricanes and wildfires. For example, Hurricane Matthew caused our Kinston, North Carolina site operations to temporarily shut down in 2017. Currently, none of our facilities have demonstrated a specific susceptibility to wildfire risks; however, our suppliers may potentially be impacted by wildfires. In addition to obtaining property damage and business interruption insurance, we maintain a Corporate Crisis Management Plan and each location has a supporting Site Crisis Management Plan. Spirit's Corporate Crisis Management Plan provides overall guidance on our company's crisis communications processes. The Site Crisis Management Plans provide the necessary level of detail required to support disaster response at each location. Spirit's Crisis Management Plans are reviewed at least twice annually or as major changes to business operations occur. Our Site Crisis Management Plans are focused on protecting employee safety and company assets, in addition to restoring critical business processes and systems and reducing the length of interruption to the business. We also conduct a post-event review within two weeks of closing the event to develop recommendations for continuous improvement.
Chronic physical	Relevant, always included	Chronic physical risks are identified and assessed by our Enterprise Risk Management and Business Continuity teams. Examples of chronic physical risks that are potentially relevant to our company include rising sea levels, rising mean temperatures, changes in precipitation patterns (including droughts), and extreme variability in weather patterns. For example, the identification of drought risk near our corporate headquarters in Wichita, Kansas, has influenced our water efficiency strategy. In 2019, we were able to recycle more than 1 billion gallons of water. We also purchased 241 million gallons of grey water. Our Senior Director of EHS, Security and Sustainability was also appointed by the Governor of Kansas to serve on the Advisory Board of the Kansas Water Authority. Representing industrial water users in Kansas, he works with other public and private sector leaders in the state to effectively manage water resources. We also consider chronic physical risks in the context of broader industry implications because demand for travel and tourism can be influenced by weather patterns and other chronic physical climate risks.

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	Mandates on and regulation of existing products and services
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Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

Our operations are subject to extensive regulation under environmental, health, and safety laws and regulations in the U.S. and other countries in which we operate. We

may be subject to potentially significant fines or penalties, including criminal sanctions, if we fail to comply with these requirements. We have made, and will continue to make, significant capital and other expenditures to comply with these laws and regulations. We cannot predict with certainty what environmental legislation will be enacted in the future or how existing laws will be administered or interpreted. For example, we may become obligated to report on or reduce greenhouse gases and/or other air emissions. We cannot give any assurance that the aggregate amount of future remediation costs and other environmental liabilities will not be material. Increased concern over climate change has led to new and proposed legislative and regulatory initiatives. New or revised laws and regulations in this area could directly and indirectly affect Spirit, its customers, or its suppliers by increasing production costs or otherwise impacting operations. Compliance with any new or more stringent laws or regulations, or stricter interpretations of existing laws, could require additional expenditures by the Company and could have an adverse effect on our business, financial condition, and results of operations. Compared to other industries, aviation is a currently a relatively small contributor to emissions – with approximately 2.4% of U.S. greenhouse gas emissions coming from commercial aircraft sources, and a further 1.1% from other aircraft – including those used by the military. For comparison, passenger cars and light duty trucks – including SUVs, pickup trucks and minivans, emit approximately 21.2% of U.S. greenhouse gas emissions. Globally, emissions from aviation are roughly comparable to those from the IT sector. Additionally, the aviation industry has taken an early, voluntary and proactive stance to reduce greenhouse gas emissions. Current aviation goals are driven by a long-term target to achieve a 50% reduction in net emissions by 2050, compared to 2005 levels. The industry measures may reduce Spirit's exposure to risks associated with emerging regulations.

Time horizon

Medium-term

Likelihood

Unknown

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

10602000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Estimated financial impact assumes the potential for an approximate 2% decrease in 2019 net income associated with investments and/or increased production costs to comply with future climate-related regulations.

Cost of response to risk

10000000

Description of response and explanation of cost calculation

We continually monitor our operations and facilities to ensure compliance with all applicable environmental, health and safety laws and regulations. Spirit has also developed strong systems to comply with applicable legal, regulatory and other requirements related to preventing pollution, injury and ill health. We employ industry-leading, technologically sound and economically feasible control mechanisms, procedures and processes. We also provide training, education, monitoring, auditing, and awareness programs at our offices and factories. All of Spirit's production facilities are either ISO 14001 and/or ISO 9001 certified. As part of the ISO certification process, we continue to assess our most significant environmental aspects at the factory-level, and develop action plans to ensure continuous improvement. While Spirit's direct operational emissions footprint are currently less than 500,000 MT CO₂e, we recognize that our OEM products have more significant downstream emissions impacts when used in aircraft. As such, we actively support and participate in industry initiatives to support the long-term decarbonization of the aviation industry. For example, our CEO serves on the Executive Committee for the Aerospace Industries Association (AIA), which has identified climate change as a top industry issue. In addition, Spirit's CEO chairs the AIA's Civil Aviation Leadership Council, comprised of industry CEOs, which has made sustainability in the aviation industry one of its key focus areas. In 2008, AIA and U.S. manufacturers were part of the industry-wide agreement, in which aviation became the first industrial sector to set goals to reduce its climate impact. In collaboration with the International Civil Aviation Organization (ICAO) – a specialist branch of the United Nations, our industry is targeting a 50% reduction in net emissions by 2050, compared to 2005 levels. COST CALCULATION: Annually, we invest approximately \$10 million in compliance systems and associated capital investments to manage this risk.

Comment

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Market	Uncertainty in market signals
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Primary potential financial impact

Increased direct costs

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

Our profitability is affected by the prices of the components and raw materials, such as titanium, aluminum, steel, and carbon fiber, used in the manufacturing of our products. These prices may fluctuate based on a number of factors beyond our control, including world oil prices, changes in supply and demand, general economic conditions, labor costs, competition, import duties, tariffs, currency exchange rates and, in some cases, government regulation. Although our supply agreements with Boeing and Airbus allow us to pass on to our customers certain unusual increases in component and raw material costs in limited situations, we may not be fully compensated by the customers for the entirety of any such increased costs. To a lesser extent, we also are exposed to fluctuations in the prices of certain utilities and services, such as electricity and natural gas. Also, due to the competitive nature of the airline industry, airlines are often unable to pass on increased fuel prices to customers by increasing fares. Fluctuations in the global supply of crude oil and the possibility of changes in government policy on jet fuel production, transportation, and marketing make it difficult to predict the future availability and price of jet fuel. In the event there are significant disruptions in oil production or delivery in oil-producing areas or elsewhere, there could be reductions in the production or importation of crude oil and significant increases in the cost of fuel. If there were major reductions in the

availability of jet fuel or significant increases in its cost, the airline industry and, as a result, our business, could be materially adversely affected.

Time horizon

Short-term

Likelihood

Unknown

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

10602000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Estimated financial impact assumes the potential for an approximate 2% decrease in 2019 net income associated with increases in the price of fuel, energy and/or raw materials.

Cost of response to risk

10000000

Description of response and explanation of cost calculation

To mitigate these risks, we use our strategic sourcing initiatives, and are party to collective raw material sourcing contracts arranged through certain customers that allow us to obtain raw materials at pre-negotiated rates and help insulate us from market volatility across the industry for certain specialized metallic and composite raw materials used in the aerospace industry. In addition, we also have long-term supply agreements with a number of our major parts suppliers. We generally do not employ forward contracts or other financial instruments to hedge commodity price risk, although we continue to review a full range of business options focused on strategic risk management for all raw material commodities. We have long-standing relationships with hundreds of manufacturing suppliers. Our strategy is to enter into long-term contracts with suppliers to secure competitive pricing. Our exposure to rising costs of raw material is limited to some extent through leveraging relationships with our OEM customers' high-volume contracts. We continue to seek and develop sourcing opportunities in North America, Europe, and Asia to achieve a competitive global cost structure. Over 25 countries are represented in our international network of suppliers. From time to time, we also review our "make" versus "buy" strategy to determine whether it would be beneficial to us to outsource work that we currently produce in-house or vice versa. At the industry level, significant steps have been undertaken to support the development of sustainable aviation fuels, which would reduce reliance on crude oil. The advancement of sustainable aviation fuels also presents the opportunity to reduce aircraft life cycle emissions by 80% without changes to aircraft and fueling infrastructure. As an OEM supplier, we aim to support innovation and the potential large-scale commercialization of sustainable aviation fuels within the aviation industry. COST CALCULATION: Annually, we invest approximately \$10 million in our strategic sourcing research and development initiatives to manage this risk.

Comment

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Reputation	Increased stakeholder concern or negative stakeholder feedback
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Primary potential financial impact

Decreased access to capital

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

Investors, customers, employees and communities are increasingly interested in learning more about how companies like Spirit are addressing climate-related risks and opportunities. Over the past year, we have observed heightened awareness and attention from our investors and customers to better understand Spirit's climate governance, strategy, risks, metrics and targets in alignment with the Task Force for Climate-Related Financial Disclosures framework's tenets. We also expect employee interest in climate change to continue to grow as Gen Z employees enter our workforce. For example, a recent Cone study found that 83% of Gen Z respondents surveyed consider a company's purpose when deciding where to work. 87% of Gen Z respondents stated that they were inspired by the climate activism of Greta Thunberg. Additionally, the reputation of the aviation industry on climate issues is a potential risk. Currently, air transport only represents about 2% of global greenhouse gas emissions. However, long-term demand for air transport has been projected to increase by 4.3% per year for the next 20 years. While the industry projections suggest this growth will support 15.5 million jobs and add \$1.5 trillion in GDP to the global economy, industry growth is also expected to translate to a 300-700% increase in greenhouse gas emissions by 2050, according to the International Civil Aviation Organization (ICAO). In 2020, global annual international aviation emissions were approximately 70% higher than in its 2005 base year. To meet our industry's goal to reduce net emissions 50% by 2050 -- compared to 2005 levels, significant progress will be need to be made in the years to come.

Time horizon

Medium-term

Likelihood

Unlikely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

78630000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Estimated financial impact assumes the potential for an approximate 1% decrease in 2019 revenue associated with our reputation among investors, customers, employees and communities with regards to how we are addressing climate change.

Cost of response to risk

10000000

Description of response and explanation of cost calculation

Spirit is committed to working as a responsible citizen in the communities in which we live and work. This commitment drives us to continually improve operations through innovation, while seeking to work in harmony with the environment. To deliver on this commitment, we consider the nexus between climate, water and waste. For example, in 2020, we announced that Spirit will be switching to electricity generated by a Kansas wind farm to power its aircraft factory in Wichita. Once completed, the wind farm is expected to generate about 130 megawatts of power. In 2019, we also recycled more than 1 billion gallons of water and purchased 241 million gallons of grey water -- dramatically reducing our potable water usage. Additionally, we celebrated a 70% waste-to-landfill diversion rate and recycled 70% of total non-hazardous waste generated at our largest production facility in Wichita, Kansas. In 2020, we established a strong foundation to further accelerate and formalize Spirit's environmental, social and governance (ESG) commitments. We completed a materiality assessment, and are in the process of developing a set holistic set of long-term performance targets. We plan to officially launch our enhanced ESG strategy, commitments and targets in Spirit's first-ever Sustainability Report, using the Global Reporting Initiative standards, in 2021. In our role as an OEM supplier, we also strive to be at the forefront of advancing solutions to reduce aviation industry net emissions 50% by 2050. For example, our CEO serves on the Executive Committee of Aerospace Industry Association, which has prioritized climate change as a top issue to address over the next decade. COST CALCULATION: Annually, we invest approximately \$10 million in capital investments, trade association dues, management expenses, consulting fees and other expenses to manage this risk.

Comment

Identifier

Risk 4

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical	Increased severity and frequency of extreme weather events such as cyclones and floods
----------------	--

Primary potential financial impact

Decreased revenues due to reduced production capacity

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

Our manufacturing facilities or our suppliers' manufacturing facilities could be damaged or disrupted by extreme weather events, including hurricanes and wildfires. For example, Hurricane Matthew caused our Kinston, North Carolina site operations to temporarily shut down in 2017. Spirit maintains broad insurance coverage for both property damage and business interruption where appropriate. While we expect that insurance proceeds would be sufficient to cover most of the business interruption expenses, certain deductibles and limitations will apply and no assurance can be made that all recovery costs will be covered. In 2018, we recorded a gain of \$10.0 million from an insurance settlement related to costs incurred from the aftermath of Hurricane Matthew, compared to expenses of \$19.9 million for the same period in the prior year for Hurricane Matthew. Although we have obtained property damage and business interruption insurance where appropriate, a sustained mechanical failure of a key piece of equipment, major catastrophe (such as a hurricane, wildfire, major snow storm, or other natural disaster), in any of the areas where we or our suppliers conduct operations could result in a prolonged interruption of all or a substantial portion of our business. Any disruption resulting from these events could cause significant delays in shipments of products and the loss of sales and customers and we may not have insurance to adequately compensate us for any of these events. A large portion of our operations takes place at one facility in Wichita, Kansas; and any significant damage or disruption to our operations in Wichita, Kansas could materially adversely affect our ability to service our customers. Our dependency upon regular deliveries from particular suppliers of components and raw materials means that interruptions or stoppages in such deliveries could materially adversely affect our operations until arrangements with alternate suppliers, to the extent alternate suppliers exist, could be made. If any of our suppliers were unable or were to refuse to deliver materials to us for an extended period of time, or if we were unable to negotiate acceptable terms for the supply of materials with these or alternative suppliers, our business could suffer and be materially affected. Also, any failure by our suppliers to provide acceptable raw materials, components, kits, or subassemblies could adversely affect our production schedules and contract profitability.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

10602000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Estimated financial impact assumes the potential for an approximate 2% decrease in 2019 net income associated with property damages and/or business disruptions from hurricanes.

Cost of response to risk

10000000

Description of response and explanation of cost calculation

In addition to obtaining property damage and business interruption insurance, we maintain a Corporate Crisis Management Plan and each location has a supporting Site Crisis Management Plan. Spirit's Corporate Crisis Management Plan provides overall guidance on our company's crisis communications processes. The Site Crisis Management Plans provide the necessary level of detail required to support disaster response at each location. Spirit's Crisis Management Plans are reviewed at least twice annually or as major changes to business operations occur. Our Site Crisis Management Plans have been developed using ISO 22301, NIST SP 800-34 and NFPA 1600 standards for Business Continuity and Disaster Recovery. The Site Crisis Management Plans define team roles and responsibilities among the site manager, site business continuity coordinator, site crisis management team, business continuity teams and incident response teams. Our Site Crisis Management Plans are focused on protecting employee safety and company assets, in addition to restoring critical business processes and systems and reducing the length of interruption to the business. We also conduct a post-event review within two weeks of closing the event to develop recommendations for continuous improvement. Additional plans to support continuity of operations include our (1) Aviation Event Response Plan, (2) Global IT Disaster Recovery Plan and (3) Disaster Preparedness Plan. Spirit also maintains an Emergency Operations Center, which is a physical location to support a Site Crisis Management Team or Incident Commands response effort during a critical incident or event. During an extreme weather event, Spirit's Corporate Crisis Management Team is tasked with managing communications with suppliers. In preparation for extreme weather events, we assess the qualifications of suppliers and continually monitor them to control risk associated with potential supply base reliance. COST CALCULATION: Annually, we invest approximately \$10 million in resiliency investments, insurance and the management of Spirit's business continuity plans.

Comment

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?

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

Spirit's physical assets consist of 17.2 million square feet of building space located on nearly 1,500 acres in eight facilities. We produce our fuselage and propulsion systems from our primary manufacturing facility located in Wichita, Kansas with some fuselage work done in our Kinston, North Carolina; Saint Nazaire, France; and Subang, Malaysia facilities. We produce wing systems in our manufacturing facilities in Tulsa, Oklahoma; Kinston, North Carolina; Prestwick, Scotland; and Subang, Malaysia. In addition to these sites, we have a facility located in McAlester, Oklahoma that supplies machined parts and sub-assemblies to the Wichita and Tulsa facilities. In 2019, we purchased nearly 1.4 million megawatt hours of energy. Approximately 55% of energy consumption was directly used onsite, primarily in the form of natural gas to produce heat and steam. The remaining 45% energy consumption was from purchased electricity. By increasing the energy efficiency of our production and distribution processes, we have the opportunity to reduce our annual spend on natural gas, diesel, propane, gasoline and electricity. We also the opportunity to help reduce our customers' Scope 3 emissions associated with the procurement of our fuselage, propulsion and wing systems.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

26505000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Estimated financial impact assumes the potential for an approximate 5% increase in 2019 net income due to reduced energy spend and reputational benefits associated with efficiency gains.

Cost to realize opportunity

10000000

Strategy to realize opportunity and explanation of cost calculation

We are committed to continually improving our operations through innovation, which includes reducing our environmental footprint. For example, at our largest facility in Wichita, we have developed a compressed air system, which is designed to both increase energy efficiency and system reliability. As part of the project, we have installed four sector regulators to reduce energy demand. Due to the projected energy savings from the sector regulators, we expect a project payback period of 2.2 years. Across all facilities, we continue to identify further energy efficiency opportunities, including LED lighting retrofits, enhancements to cooling towers and behavioral change initiatives. Spirit AeroSystems is developing efficiencies at every step of the manufacturing process through our integrated teams, quality assurance programs and rapid response operations. We also drive efficiencies through our focus on factory automation. Recent investments in new and upgraded technology include robotics and other automated manufacturing processes. These new machines ensure greater precision and consistency for components delivered to the world's leading commercial aircraft programs. For our customers, Spirit is also pioneering advanced manufacturing technologies, such as composite manufacturing processes, using resin-infusion technology including vacuum-assisted resin transfer molding. Additionally, Spirit's Inflexion® technology also eliminates the need for fasteners. Typically, composite structures are formed using rigid tools that must be removed from inside the product. This limits the complexity and size of the structures. Inflexion technology also enables large, complex composite aerostructures to be designed and built in one continuous piece, for products that are lighter, more affordable and more efficient. COST CALCULATION: Annually, we invest approximately \$10 million in energy efficiency investments and related performance improvement initiatives to capitalize on this opportunity.

Comment**Identifier**

Opp2

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 resulting from increased demand for products and services

Company-specific description

The International Air Transport Association has projected the commercial air travel may surpass seven billion passengers by 2035, accelerating the need for new aircraft to meet demand and replenish aging fleets. As a Tier 1 supplier in the aerospace industry to both Airbus and Boeing, Spirit plays a critical role in the supply chain for aircraft. At the same time, climate change presents a critical challenge to business and society and in response, the aviation industry has set a bold and important target to reduce 2050 net emissions by 50%, from 2005 levels. Industry associations, nonprofits, and international agencies, including International Civil Aviation Organization (ICAO), International Air Transport Association (IATA), Air Transport Action Group (ATAG), Aerospace Industries Association (AIA), and International Aerospace Environmental Group (IAEG) are collaborating to advance solutions in support our short-term, medium-term and long-term climate goals. These leading organizations have identified priority issues and established a single framework to measure and guide the industry's progress. In 2008, the industry has identified technological innovation – specifically increased fuel-efficiency, light-weight planes, electrification, hybrid technologies – as a top priority to address climate change. Modern commercial jetliners are now 80% more fuel efficient than the first jetliners put in service, and each new aircraft generation improves fuel efficiency by 15% to 25% on a per passenger mile basis. In the long-term, new technologies, including electrification, are expected to offer additional avenues to reduce greenhouse emissions from air travel – at least from shorter distances. As the world's largest supplier of composite aerostructures – producing over 2.5 million pounds of composite structures each year, we are uniquely positioned to support industry decarbonization. A comprehensive study by the universities of Sheffield, Cambridge, and University College London published within the International Journal of Life Cycle Assessment found that, compared to a metallic aircraft, composites reduce carbon emissions by 20% over the life of an aircraft. Studies show composite wings are approximately 34-40% lighter than the equivalent metallic wings which enables a 5-8% fuel burn savings through weight reduction alone. Composite wings are also estimated to last up to 3x longer compared to metallic wings due to their improved fatigue properties.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

78630000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Estimated financial impact assumes the potential for an approximate 1% increase in 2019 revenue due to increased competitive advantage associated with our energy, climate and broader sustainability strategies to support aviation industry decarbonization goals.

Cost to realize opportunity

10000000

Strategy to realize opportunity and explanation of cost calculation

Spirit AeroSystems is continually applying its distinctive capabilities to reduce carbon emissions throughout the entire life cycle of aircraft development, manufacturing, operations, and retirement. A key example is Spirit's Intelligent Resin Infusion System (IRIS™) technology. Spirit has recently applied its IRIS™ technology to produce a composite lower wing cover demonstrator. Targeted for a future composite wing, the innovations within the IRIS™ lower wing cover demonstrator combine for a wide array of energy savings and emission reductions both during manufacturing and over the life of the aircraft. The IRIS™ technology features a series of innovations, which apply Spirit's patented self-heated tooling and resin infusion technology, to produce the world's first composite lower wing cover demonstrator. A newly-developed combined inspection and metrology cell streamlines part validation by nearly 50%. IRIS™'s combined design, material, simulation, fabrication, automation, and tooling innovations not only enable the 20% carbon emissions reduction possible with composite aircraft, but reduce manufacturing processing times by 20% and operating costs by nearly 30%. A

corresponding similar reduction to overall equipment needs, floor space requirements, and energy usage required throughout the manufacturing process is also possible. During manufacturing, the self-heated tooling within the IRIS™ technology enables up to 50% energy savings compared to traditional autoclave curing of the composite material. Additionally, self-heated tooling technology eliminates the need for the many tons of nitrogen per year required to operate autoclaves during composite manufacturing. The IRIS™ technology can also be applied to composite structures well beyond an aircraft's lower wing cover, including tail planes and fairings. Eliminating the need for large autoclaves and ovens, it also enables entirely new aircraft architectures, such as the blended wing body, which are estimated to achieve up to a 20% fuel savings compared to conventional aircraft designs. Future markets, such as urban air mobility, unmanned aerial vehicles, and high-performance marine vessels, could also benefit from the cycle time and operating costs reductions from these technologies. COST CALCULATION: Annually, we invest approximately \$10 million in research & development investments and other expenses associated to capitalize on this opportunity.

Comment

Identifier

Opp3

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resilience

Primary climate-related opportunity driver

Participation in renewable energy programs and adoption of energy-efficiency measures

Primary potential financial impact

Returns on investment in low-emission technology

Company-specific description

Following the Paris climate agreement and in response to increased corporate demand for renewable energy procurement, the regulatory landscape globally may shift over the next decade. The further development and enactment of renewable energy regulations at the national, state and local levels may create new investment opportunities for our Company. Additionally, we have the opportunity to capitalize on rebates from utilities and governments in support of our energy efficiency measures. Annually, Spirit AeroSystems typically purchases approximately 600,000 MWh of electricity across numerous markets, including Wichita, Kansas, where we are headquartered and maintain our largest physical presence. Our ability to utilize more renewable energy and further increase energy efficiency could result in substantive cost savings. Additionally, investing in onsite renewable energy can increase the resilience of our properties and help increase the value and productivity of individual facilities.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

26505000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Estimated financial impact assumes the potential for an approximate 5% increase in 2019 net income due to returns on investment and reputational benefits from renewable energy and energy efficiency projects.

Cost to realize opportunity

10000000

Strategy to realize opportunity and explanation of cost calculation

In 2020, Spirit made a significant investment decision that will enable our largest facility to be 100% powered by renewable electricity. Spirit will be switching to electricity generated by a Kansas wind farm to power its aircraft factory in Wichita, Kansas. Once completed, the wind farm is expected to generate about 130 megawatts of power. In total, we will have 4,535 megawatts of power generation capacity, with 660 megawatts of recently added wind generation in our portfolio. Spirit worked closely with Kansas public utility regulators to clear a path for the company's complete conversion to renewable wind-generated electricity at our Wichita, Kansas manufacturing facility, which is 12.8 million square-feet and represents more than 75% of the total square footage across all of our production facilities. Utility regulators at the Kansas Corporation Commission approved a 10-year agreement filed jointly by the company and Evergy, Inc. that provides an updated electric rate structure. In return, Spirit has agreed to purchase Kansas wind-generated electricity, continue investing in capital improvements and make efforts to maintain stable or expanded operations in Wichita. The choice of wind energy was a natural fit because the state of Kansas is known for providing strong and reliable wind supply. The new electric rates that Spirit will be paying address price disadvantages for electric service Spirit has experienced in Kansas compared to our operations in other states. We will also be supporting local economic development because the wind farm is located approximately 50 miles from our corporate headquarters. In addition to providing renewable energy, we continue to invest in energy efficiency projects at our facilities around the world. Examples include LED lighting and upgrades to HVAC systems. We take advantage of rebates whenever available and applicable. COST CALCULATION: Annually, we invest approximately \$10 million, net of rebates and incentives, in renewable energy generation and energy efficiency projects to capitalize on this opportunity.

Comment

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization's strategy and/or financial planning?

Yes, and we have developed a low-carbon transition plan

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform its strategy?

Yes, qualitative and quantitative

C3.1b

(C3.1b) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenarios and models applied	Details
2DS	<p>INPUTS, ASSUMPTIONS AND ANALYTICAL CHOICES: We have set a provisional target to achieve a 30% absolute reduction in Scope 1 and 2 emissions from 2019-2030. This 2030 target is based on a decarbonization pathway in the excess of the 2.5% annual decreases expected for alignment with the 2-degree Celsius level of ambition for science-based targets using the Science-Based Targets initiative's absolute-based contraction approach. The procurement of renewable energy is will central toward to execute on our 2030 target. We also aim to source 100% renewable energy by 2030. Additionally, we aim to ensure that 100% of our top suppliers will have also set science-based targets. We will also continue to partner with customers to help reduce the life cycle emissions of aircraft. BOUNDARY AND TIME HORIZONS: Scenario analysis consider our entire value chain, including our suppliers, owners and guests. We consider risks and opportunities within 15-year time horizon used for reporting on risks and opportunities in Questions C2.3 and C2.4. The geographic areas considered includes all locations we were operate with a focus on the United States where we most of or production facilities are located. In particular, we prioritize our operations in Wichita, Kansas – our largest facility with more than 75% of 2019 square footage and Scope 1 and 2 emissions. INFLUENCE ON STRATEGY AND FINANCIAL PLANNING: The decision making process with regards to strategy and financial planning considers the following materiality-based factors: (1) greatest business impacts; (2) our degree of control and/or influence; and (3) the needs, concerns and key business drivers of our stakeholders. For example, to prioritize our greatest physical and transition risks, we consider the risks that are most applicable to the aviation industry, which includes potential reputational and regulatory risks. We also consider value chain impacts, the location of our properties and alignment with our Company's strategic priorities. Additionally, we consider how physical and transition risks could also have broader socioeconomic impacts that could influence our revenues and profitability over the short-term (1-2 years), medium-term (3-5 years) and long-term (6-15 years). RESULTS: An example of how the scenario analysis has directly influenced our business objectives and strategy is that we align our emissions reduction strategies and investments in product innovation to support the aviation industry's target to reduce 2050 net emissions by 50%, from 2005 levels. As the world's largest supplier of composite aerostructures, we are uniquely positioned to support industry decarbonization. A comprehensive academic study found that, compared to a metallic aircraft, composites reduce carbon emissions by 20% over the life of an aircraft. Spirit AeroSystems is continually applying its distinctive capabilities to reduce carbon emissions throughout the entire life cycle of aircraft development, manufacturing, operations, and retirement. A key example is Spirit's Intelligent Resin Infusion System (IRIS™) technology. In 2020, Spirit also made a significant investment decision that will enable our largest facility to be 100% powered by renewable electricity by the end of 2020. Spirit will be switching to electricity generated by a nearby wind farm to power its aircraft factory in Wichita, Kansas. We have also prioritized extreme weather events as our greatest physical risk due to (1) potential business disruptions, (2) potential property damage and (3) potential increases in insurance premiums. Spirit has developed Site Crisis Management Plans using ISO 22301, NIST SP 800-34 and NFPA 1600 standards for Business Continuity and Disaster Recovery. The Site Crisis Management Plans define team roles and responsibilities among the site manager, site business continuity coordinator, site crisis management team, business continuity teams and incident response team.</p>

C3.1d

(C3.1d) 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	Based on our scenario analyses, identified potential risks associated with product and services – specifically Spirit’s fuselage, propulsion and wing systems – include extreme weather events, uncertainty in market signals and reputation. Strategic decisions influenced these risks include our (1) establishment and maintenance of Spirit’s Corporate and Site Crisis Management Plans, (2) developing of strategic sourcing initiatives and (3) innovation initiatives (including composite technologies that reduce life cycle emissions). The management of these risks also present the opportunity for Spirit AeroSystems to increase operational resilience and establish competitive advantages. The potential magnitude of these risks and opportunities are currently considered to be medium (in the context of 2019 net income) over the next 15 years.
Supply chain and/or value chain	Yes	Based on our scenario analyses, identified potential upstream risks associated with our supply chain include changes in the cost of energy, fuel and raw materials in addition to broader uncertainty in market signals associated with climate change. For example, we rely on raw materials, such as titanium, aluminum, steel, and carbon fiber, used in the manufacturing of our products. We also typically purchase nearly 1.5 million MWHs of energy annually. Downstream potential risks within our value chain – notably consumer use of aircraft that contains our fuselage, propulsion and wing systems – include reputation of the aviation industry. The aviation industry has taken an early, voluntary and proactive stance to reduce greenhouse gas emissions. However, industry growth over the next 15 years will likely result in increased stakeholder interest in progress toward aviation industry targets to reduce 2050 net carbon emissions from 2005 levels. The management of risks may also present the opportunity for our company to increase long-term revenue growth and establish competitive advantages through innovations that support industry decarbonization. For example, technological innovation – specifically increased fuel-efficiency, light-weight planes, electrification, hybrid technologies – is a top industry priority to address climate change. Strategic decisions influenced these risks include our (1) innovation initiatives (including composite technologies that reduce life cycle emissions) and (2) investments associated with participation in industry associations in support of aviation decarbonization goals. The potential magnitude of these risks and opportunities are currently considered to be medium-high (in the context of 2019 net income) over the next 15 years.
Investment in R&D	Yes	Our investments in R&D have been influenced by climate-related risks associated with the reputation of the aviation industry, and opportunities for competitive differentiation through investments in low carbon solutions for our customers. Research and development at Spirit is focused long-term on the future of aerospace manufacturing. Spirit is actively developing new concepts, designs and solutions that will help build next-generation aircraft. For example, Spirit was named a 2020 JEC Innovation Award Finalist for its Intelligent Resin Infusion System (IRIS™) technology. A comprehensive study by the universities of Sheffield, Cambridge, and University College London published within the International Journal of Life Cycle Assessment found that, compared to a metallic aircraft, composites reduce carbon emissions by 20% over the life of an aircraft. Studies show composite wings are approximately 34-40% lighter than the equivalent metallic wings – this enables a 5-8% fuel burn savings through weight reduction alone.
Operations	Yes	Based on our scenario analyses, identified potential risks associated with operations (which include our eight manufacturing facilities) include potential increases in the price of energy and fuel and extreme weather events. Potential opportunities include further increasing of the energy efficiency of manufacturing processes, and increasing our consumption of renewable energy. Strategic decisions influenced these risks and opportunities include our (1) decision to transition to 100% wind energy at our largest facility in Kansas, (2) establishment and maintenance of Spirit’s Corporate and Site Crisis Management Plans; and (3) investments in energy efficiency (including LED retrofits, HVAC updates and the installation of four sector regulators to reduce energy demand). For example, we expect a project payback period of 2.2 years from Spirit’s investment in four sector regulators, which was part of our multi-phased compressed air sustainability initiative. We also consider drought risk in Wichita, Kansas, which influences our water efficiency strategy. For example, in 2019, we were able to recycle more than 1 billion gallons of water and purchased 241 million gallons of grey water. The potential magnitude of these risks and opportunities are currently considered to be medium (in the context of 2019 net income) over the next 15 years.

C3.1e

(C3.1e) 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 Direct costs Indirect costs Capital expenditures Capital allocation Acquisitions and divestments Access to capital Assets	REVENUES: The most significant risk identified as having a potential impact to our revenues is related to reputation as our customers are increasingly interested in climate change and broader sustainability issues. The management of these risks also presents the potential opportunity to increase revenue through competitive differentiation. Examples of how these risks and opportunities have been integrated into our financial planning process include our investments in composite technologies that reduce life cycle emissions. The potential magnitude of these risks and opportunities are currently considered to be medium-high (in the context of our 2019 net income) over a 15-year evaluation horizon. DIRECT & INDIRECT COSTS: The most significant risk identified as having a potential impact to our operating costs is changes in the cost of energy, fuel and raw materials (including titanium, aluminum, steel, and carbon fiber). Potential opportunities associated with managing this risk include more energy efficient processes and participating in renewable energy programs. Examples of how these risks and opportunities have been integrated into our financial planning process include our decision to purchase 100% wind energy in Kansas, and investments in energy efficiency (including Spirit’s recent compressed air project). The potential magnitude of these risks and opportunities are currently considered to be medium (in the context of our 2019 net income) over 15-year evaluation horizon. CAPITAL EXPENDITURES & ALLOCATIONS: The most significant risks and opportunities identified as having a potential impact to our capital expenditures are related to reputation as the aviation industry works toward its 2050 decarbonization goals. Examples of how these risks and opportunities have been integrated into our financial planning process include our investments in composite technologies that reduce life cycle emissions. The potential magnitude of these risks and opportunities are currently considered to be medium-high (in the context of our 2019 net income) over a 15-year evaluation horizon. ACQUISITIONS: As part of our acquisitions, we consider our capabilities to respond to evolving customer needs, including those related to fuel efficiency. Through acquisitions, we also have the opportunity to share and transfer best practices for efficient production processes that can reduce greenhouse gas emissions within our value chain. The potential magnitude of these risks and opportunities are currently considered to be medium (in the context of our 2019 net income) over a 15-year evaluation horizon. ASSETS: The most significant risks associated with the value of our assets is extreme weather events (in the short-term) and rising sea levels (in the long-term.) Currently, our Kinston, North Carolina facility, which is leased, has the highest exposure to physical climate risks. Examples of how these risks have been integrated into our financial planning process including establishment and maintenance of Spirit’s robust Corporate and Site Crisis Management Plans. Spirit also maintains supporting plans, including disaster response. The potential magnitude of these risks and opportunities are currently considered to be low (in the context of our 2019 net income and total assets) and is based on a 15-year evaluation horizon. ACCESS TO CAPITAL: We believe that increased access to capital is a climate-related opportunity for our company. We plan to officially launch our enhanced ESG strategy, commitments and targets in Spirit’s first-ever Sustainability Report, using the Global Reporting Initiative standards, in 2021. We also invest in tools and resources to benchmark our ESG performance. The potential magnitude of this opportunity is currently considered to be medium (in the context of our 2019 total assets) over a 15-year evaluation horizon.

C3.1f

(C3.1f) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

Spirit AeroSystems operates according to three key values that enable the company to meet commitments to all stakeholders — including employees, customers, suppliers, investors and communities. These values are transparency, collaboration and inspiration.

Adopting and incorporating Spirit values into day-to-day tasks and activities enables the company to be a trusted partner. Practicing transparency, collaboration and inspiration—individually and collectively—allows Spirit to be customer focused, provide on-time delivery, maintain and improve quality and ensure safety for all. These are the foundational outcomes that make Spirit successful, which is why we are proud to call these four elements, “Spirit’s DNA.”

We view the management of climate and broader environmental, social and governance (ESG) as a power accelerator to support our values; strengthen our ability to serve as a trusted partner; and further solidify the strong DNA that makes our Company unique.

We also believe that our climate strategy will support our strategies for business growth. Spirit is currently focused on business growth through the application of key strengths, including design for manufacturability, materials utilization expertise, targeted automation, advanced tooling and testing concepts, and determinant assembly to enable cost-effective, highly efficient production.

Our business growth is focused on application of these strengths to expand into new addressable commercial and defense markets and customers. We have recently unveiled plans to grow in two key areas: Fabrication and Defense. To capitalize on growth opportunities, we invest in new technology to bring the most advanced techniques, manufacturing, and automation to our customers. We also apply our extensive experience in advanced material systems, manufacturing technologies, and prototyping to continually invent and patent new technologies that improve quality, lower costs, and increase production capabilities.

As Spirit applies its distinctive capabilities to reduce carbon emissions throughout the entire life cycle of aircraft development, manufacturing, operations, and retirement, we see direct correlations to improving quality, lowering cost, increasing capabilities and accelerating innovation.

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

Year target was set

2020

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (market-based)

Base year

2019

Covered emissions in base year (metric tons CO2e)

433752

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)

100

Target year

2030

Targeted reduction from base year (%)

30

Covered emissions in target year (metric tons CO2e) [auto-calculated]

303626.4

Covered emissions in reporting year (metric tons CO2e)

433752

% of target achieved [auto-calculated]

0

Target status in reporting year

New

Is this a science-based target?

Yes, we consider this a science-based target, but this target has not been approved as science-based by the Science-Based Targets initiative

Please explain (including target coverage)

This is a provisional target, and is based on a decarbonization pathway in the excess of the 2.5% annual decreases expected for alignment with the 2-degree Celsius level of ambition for science-based targets using the Science-Based Targets initiative's absolute-based contraction approach. Within the next twelve months, Spirit expects to launch and announce a holistic, comprehensive set of long-term sustainability targets.

C4.2

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

Target(s) to increase low-carbon energy consumption or production

Other climate-related target(s)

C4.2a

(C4.2a) Provide details of your target(s) to increase low-carbon energy consumption or production.

Target reference number

Low 1

Year target was set

2020

Target coverage

Company-wide

Target type: absolute or intensity

Absolute

Target type: energy carrier

Electricity

Target type: activity

Consumption

Target type: energy source

Renewable energy source(s) only

Metric (target numerator if reporting an intensity target)

Percentage

Target denominator (intensity targets only)

<Not Applicable>

Base year

2019

Figure or percentage in base year

0

Target year

2030

Figure or percentage in target year

100

Figure or percentage in reporting year

0

% of target achieved [auto-calculated]

0

Target status in reporting year

New

Is this target part of an emissions target?

To support our emissions target, we have set a goal to achieve 100% consumption of renewable electricity by 2030

Is this target part of an overarching initiative?

RE100

Please explain (including target coverage)

We aim to achieve 100% renewable electricity consumption by 2030. In 2020, Spirit made a significant investment decision that will enable our aircraft factory in Wichita, Kansas to be 100% powered by renewable electricity. At 12.8 million square-feet, our Wichita, Kansas operations represent more than 75% of the total square footage across all of our production facilities.

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

2020

Target coverage

Company-wide

Target type: absolute or intensity

Absolute

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

Engagement with suppliers	Other, please specify (Percentage of top suppliers with science-based emissions reduction targets)
---------------------------	--

Target denominator (intensity targets only)

<Not Applicable>

Base year

2019

Figure or percentage in base year

0

Target year

2030

Figure or percentage in target year

100

Figure or percentage in reporting year

0

% of target achieved [auto-calculated]

0

Target status in reporting year

Underway

Is this target part of an emissions target?

No, this target is not directly related to Spirit AeroSystems' Scope 1 and 2 emissions. It is a supply chain driven target.

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain (including target coverage)

We aim to ensure that all of our top suppliers have also developed science-based targets. Reported figure is 0% because we are in the process of developing a baseline and supplier engagement mechanism to support this target. (While we are reported 0%, it is very likely that several of our top suppliers have already established science-based targets.)

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		
To be implemented*		
Implementation commenced*		
Implemented*	1	1040
Not to be implemented		

C4.3b

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

Initiative category & Initiative type

Energy efficiency in production processes	Compressed air
---	----------------

Estimated annual CO2e savings (metric tonnes CO2e)

1040

Scope(s)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

365361

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

803794

Payback period

1-3 years

Estimated lifetime of the initiative

6-10 years

Comment

We are committed to continually improving our operations through innovation, which includes reducing our environmental footprint. For example, at our largest facility in Wichita, we have developed a compressed air system, which is designed to both increase energy efficiency and system reliability. As part of the project, we have installed four sector regulators to reduce energy demand. Due to the projected energy savings from the sector regulators, we expect a project payback period of 2.2 years. Across all facilities, we also continue to identify further energy efficiency opportunities, including LED lighting retrofits and HVAC system upgrades.

C4.3c

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

Method	Comment
Financial optimization calculations	When considering investments in emissions reduction activities, we consider internal rates of returns and payback periods for specific projects. For example, we expect a project payback period of 2.2 years from Spirit's investment in four sector regulators, which was part of our multi-phased compressed air sustainability initiative in Wichita, Kansas.
Compliance with regulatory requirements/standards	While our investments are typically voluntary and not compliance-driven, we actively monitor regulatory trends associated with energy and emissions.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?

No

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start

January 1 2019

Base year end

December 31 2019

Base year emissions (metric tons CO2e)

143969

Comment

The majority of our Scope 1 emissions are generated from natural gas consumption from manufacturing and assembly facilities. On-site diesel, gasoline, propane, and refrigerant usage were also accounted for in the Scope 1 emission calculations.

Scope 2 (location-based)

Base year start

January 1 2019

Base year end

December 31 2019

Base year emissions (metric tons CO2e)

289783

Comment

The majority of Spirit's Scope 2 emissions are from purchased electricity at our corporate headquarters in Wichita, Kansas.

Scope 2 (market-based)

Base year start

January 1 2019

Base year end

December 31 2019

Base year emissions (metric tons CO2e)

289783

Comment

Our base year 2019 market-based emissions are equal to our location-based emissions.

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

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

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)

143696

Start date

<Not Applicable>

End date

<Not Applicable>

Comment

The majority of our Scope 1 emissions are generated from natural gas consumption from manufacturing and assembly facilities. On-site diesel, gasoline, propane, and refrigerant usage were also accounted for in the Scope 1 emission calculations.

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

To track performance against our emissions target, we plan our market-based Scope 2 emissions figure.

C6.3

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

Reporting year

Scope 2, location-based

289783

Scope 2, market-based (if applicable)

289783

Start date

<Not Applicable>

End date

<Not Applicable>

Comment

In 2019, Spirit's market-based Scope 2 emissions were equal to its location-based Scope 2 emissions. Spirit facilities only use electricity as a source of Scope 2 emissions.

C6.4

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

Yes

C6.4a

(C6.4a) Provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure.

Source

Refrigerant emissions for select facilities (Tulsa, McAlester, Kinston, Prestwick, & Subang)

Relevance of Scope 1 emissions from this source

Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source

No emissions from this source

Relevance of market-based Scope 2 emissions from this source (if applicable)

No emissions from this source

Explain why this source is excluded

Refrigerant emissions are statistically insignificant in the context of combined Scope 1 and 2 emissions.

Source

San Antonio facility

Relevance of Scope 1 emissions from this source

Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source

Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source (if applicable)

Emissions are not relevant

Explain why this source is excluded

The facility was not owned during the entire calendar year of 2019. If included, emissions from this facility would be statistically insignificant in the context of combined Scope 1 and 2 emissions.

Source

2020 acquisitions

Relevance of Scope 1 emissions from this source

Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source

Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source (if applicable)

Emissions are not relevant

Explain why this source is excluded

Acquisitions made in 2020 were not relevant during the reporting year of 2019. (These acquisitions will be relevant for our 2020 data boundary if the closing conditions are met and the acquisitions are closed.)

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

Relevant, not yet calculated

Metric tonnes 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

We do not calculate, but we do consider the life cycle emissions of our purchased goods and services (including Spirit's raw materials).

Capital goods

Evaluation status

Relevant, not yet calculated

Metric tonnes 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

We do not calculate, but we do consider the life cycle emissions of capital goods (including equipment used in our production facilities).

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

Evaluation status

Not relevant, explanation provided

Metric tonnes 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

We believe that all statistically relevant fuel-and-energy-related activities are currently covered within Spirit's Scope 1 emissions.

Upstream transportation and distribution

Evaluation status

Relevant, not yet calculated

Metric tonnes 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

We do not calculate, but we do consider the life cycle emissions associated with transportation and distribution of goods that we procure.

Waste generated in operations

Evaluation status

Relevant, not yet calculated

Metric tonnes 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

To reduce our Scope 3 emissions associated with waste-to-landfill, we are currently focused on establishing a credible baseline for waste generated across all production facilities. In 2019, we recycled approximately 70% of total non-hazardous waste generated in our Wichita, Kansas facilities.

Business travel

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

5378

Emissions calculation methodology

Business travel emissions have been calculated based on the number of air miles traveled and hotels nights used. In 2019, Spirit employees traveled 13.9 million miles by air, and used 18,455 hotel nights.

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

100

Please explain

Data has been provided by our business travel vendor.

Employee commuting

Evaluation status

Not relevant, explanation provided

Metric tonnes 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

We do not believe that Scope 3 emissions from employee commuting would reach the threshold for relevance in the context of our combined Scopes 1-3 emissions. To reduce emissions associated with employee commuting, we offer flexible work arrangements for select employees. In 2020, employee commuting also decreased due to work-from-home arrangements following the COVID-19 outbreak. Also, our facilities are typically not located in large metropolitan areas, and do not result in substantial travel distances from home or significant idling for our employees.

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Metric tonnes 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

We include leased locations within our Scope 1 and 2 emissions boundary, because we report on emissions based on operational control.

Downstream transportation and distribution

Evaluation status

Relevant, not yet calculated

Metric tonnes 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

We do not calculate, but we do consider the life cycle emissions the associated with transportation and distribution of our products to our customers.

Processing of sold products

Evaluation status

Relevant, not yet calculated

Metric tonnes 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

We do not calculate, but we do consider the life cycle emissions the associated with processing of sold products (notably customer assembly of our OEM products.)

Use of sold products

Evaluation status

Relevant, not yet calculated

Metric tonnes 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

We do not calculate, but we do consider the life cycle emissions the associated with processing of sold products (notably consumer use of aircraft).

End of life treatment of sold products

Evaluation status

Relevant, not yet calculated

Metric tonnes 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

We do not calculate, but we do consider the life cycle emissions the associated with end-of-life treatment of aircraft that contains Spirit's fuselage, propulsion and wing systems.

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Metric tonnes 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

Where applicable, leased space is currently captured within our Scope 1 and 2 emissions boundary.

Franchises

Evaluation status

Not relevant, explanation provided

Metric tonnes 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

Franchises are not relevant to our business model.

Investments

Evaluation status

Not relevant, explanation provided

Metric tonnes 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

We have not identified any material investments that are not currently captured within our Scope 1 and 2 data boundary

Other (upstream)

Evaluation status

Not relevant, explanation provided

Metric tonnes 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

We have not identified any other upstream Scope 3 emission sources at this time.

Other (downstream)

Evaluation status

Not relevant, explanation provided

Metric tonnes 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

We have not identified any other downstream Scope 3 emission sources at this time.

C6.7

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

No

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

0.000005516

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

433752

Metric denominator

unit total revenue

Metric denominator: Unit total

7863000000

Scope 2 figure used

Market-based

% change from previous year

0

Direction of change

No change

Reason for change

In 2019, we measured Scope 1 and 2 emissions across all facilities for the first time.

Intensity figure

0.0285

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

433752

Metric denominator

square foot

Metric denominator: Unit total

15205000

Scope 2 figure used

Market-based

% change from previous year

0

Direction of change

No change

Reason for change

In 2019, we measured Scope 1 and 2 emissions across all facilities for the first time.

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 CO ₂ e)	GWP Reference
CO ₂	138286	IPCC Fifth Assessment Report (AR5 – 100 year)
CH ₄	56	IPCC Fifth Assessment Report (AR5 – 100 year)
N ₂ O	83	IPCC Fifth Assessment Report (AR5 – 100 year)
HFCs	5545	IPCC Fifth Assessment Report (AR5 – 100 year)

C7.2

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

Country/Region	Scope 1 emissions (metric tons CO ₂ e)
France	2
Malaysia	530
United Kingdom of Great Britain and Northern Ireland	3501
United States of America	139935

C7.3

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

By facility

C7.3b

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

Facility	Scope 1 emissions (metric tons CO ₂ e)	Latitude	Longitude
Wichita, Kansas	125692		
Tulsa, Oklahoma	9521		
McAlester, Oklahoma	594		
Kinston, North Carolina	4128		
Subang, Malaysia	530		
Prestwick, Scotland	3501		
Saint - Nazaire, France	2		

C7.5

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

Country/Region	Scope 2, location-based (metric tons CO ₂ e)	Scope 2, market-based (metric tons CO ₂ e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
France	24	24	1362	0
Malaysia	7112	7112	12157	0
United Kingdom of Great Britain and Northern Ireland	3024	3024	11832	0
United States of America	279623	279623	593514	0

C7.6

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

By facility

C7.6b

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

Facility	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Wichita, Kansas	243809	243809
Tulsa, Oklahoma	20366	20366
McAlester, Oklahoma	2695	2695
Kinston, North Carolina	12753	12753
Subang, Malaysia	7112	7112
Prestwick, Scotland	3024	3024
Saint-Nazaire, France	24	24

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?

This is our first year of reporting, so we cannot compare to last year

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)	0	758720	758720
Consumption of purchased or acquired electricity	<Not Applicable>	0	618865	618865
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>	0	1377585	1377585

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	Yes
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.

Fuels (excluding feedstocks)

Diesel

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

967

MWh fuel consumed for self-generation of electricity

967

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>

Emission factor

10.243

Unit

kg CO2e per gallon

Emissions factor source

United States Environmental Protection Agency – Emissions Factors for Greenhouse Gas Inventories (last modified April, 4, 2014)

Comment

US EPA Emissions Factors used are publicly available at: https://www.epa.gov/sites/production/files/2015-07/documents/emission-factors_2014.pdf.

Fuels (excluding feedstocks)

Natural Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

751357

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

299792

MWh fuel consumed for self-generation of steam

450814

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

1.924

Unit

kg CO2 per m3

Emissions factor source

United States Environmental Protection Agency – Emissions Factors for Greenhouse Gas Inventories (last modified April, 4, 2014)

Comment

US EPA Emissions Factors used are publicly available at: https://www.epa.gov/sites/production/files/2015-07/documents/emission-factors_2014.pdf.

Fuels (excluding feedstocks)

Propane Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

264

MWh fuel consumed for self-generation of electricity

0

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>

Emission factor

5.464

Unit

kg CO2 per m3

Emissions factor source

United States Environmental Protection Agency Mandatory Reporting Rule (Final Rule (40 CFR 98) - Commercial Sector 2013)

CommentUS EPA Emissions Factors used are publicly available at: https://www.epa.gov/sites/production/files/2015-07/documents/emission-factors_2014.pdf.**Fuels (excluding feedstocks)**

Motor Gasoline

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

6132

MWh fuel consumed for self-generation of electricity

0

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>

Emission factor

8.813

Unit

kg CO2e per gallon

Emissions factor source

United States Environmental Protection Agency – Emissions Factors for Greenhouse

CommentUS EPA Emissions Factors used are publicly available at: https://www.epa.gov/sites/production/files/2015-07/documents/emission-factors_2014.pdf.**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	966	966	0	0
Heat	299792	299792	0	0
Steam	450814	450814	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 emission factor in the market-based Scope 2 figure reported in C6.3.

Sourcing method

None (no purchases of low-carbon electricity, heat, steam or cooling)

Low-carbon technology type

<Not Applicable>

Country/region of consumption of low-carbon electricity, heat, steam or cooling

<Not Applicable>

MWh consumed accounted for at a zero emission factor

<Not Applicable>

Comment

C9. Additional metrics

C9.1

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

Description

Energy usage

Metric value

0.09

Metric numerator

Total MWhs (direct and indirect)

Metric denominator (intensity metric only)

Square feet

% change from previous year

0

Direction of change

No change

Please explain

In 2019, we measured total energy consumption across all facilities for the first time. The numerator was 1,377,585 MWhs of energy consumption. The denominator was 15.2 million square feet represented by the facilities in our data boundary.

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	Our investments in R&D have been influenced by climate-related risks associated with the reputation of the aviation industry, and opportunities for competitive differentiation through investments in low carbon solutions for our customers. Research and development at Spirit is focused long-term on the future of aerospace manufacturing. Spirit is actively developing new concepts, designs and solutions that will help build next-generation aircraft.

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

(C-T09.6a/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

Airframe

Stage of development in the reporting year

Pilot demonstration

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

≤20%

R&D investment figure in the reporting year (optional)

Comment

Spirit AeroSystems is continually applying its distinctive capabilities to reduce carbon emissions throughout the entire life cycle of aircraft development, manufacturing, operations, and retirement. A key example is Spirit's Intelligent Resin Infusion System (IRIS™) technology. Spirit has recently applied its IRIS™ technology to produce a composite lower wing cover demonstrator. Targeted for a future composite wing, the innovations within the IRIS™ lower wing cover demonstrator combine for a wide array of energy savings and emission reductions both during manufacturing and over the life of the aircraft. The IRIS™ technology features a series of innovations, which apply Spirit's patented self-heated tooling and resin infusion technology, to produce the world's first composite lower wing cover demonstrator.

C10. Verification

C10.1

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

	Verification/assurance status
Scope 1	No third-party verification or assurance
Scope 2 (location-based or market-based)	No third-party verification or assurance
Scope 3	No third-party verification or assurance

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?

No, we do not verify any other climate-related information reported in our CDP disclosure

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)?

No, and we do not anticipate being regulated in the next three years

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

C11.3

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

No, and we do not currently 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
- Yes, other partners in the value chain

C12.1a

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

Type of engagement

Compliance & onboarding

Details of engagement

Included climate change in supplier selection / management mechanism

% of suppliers by number

100

% total procurement spend (direct and indirect)

100

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

0

Rationale for the coverage of your engagement

The reported coverage is based on our supplier requirements and our strategic sourcing initiatives. Spirit's global supplier operations team conducts supplier assessments as part of contract awards. The team also conducts assessments throughout the duration of delivery of products from suppliers' facilities. We also engage with relevant suppliers to support Spirit's business continuity plans and procedures, which are reviewed at least twice annually or as major changes to business operations occur.

Impact of engagement, including measures of success

We have long-standing relationships with hundreds of manufacturing suppliers. Our strategy is to enter into long-term contracts with suppliers to secure competitive pricing and manage climate-risks that could impact the cost of our raw materials (including titanium, aluminum, steel, and carbon fiber). We manage our exposure to rising costs of raw materials through leveraging relationships with our OEM customers' high-volume contracts. We continue to seek and develop sourcing opportunities in North America, Europe, and Asia to achieve a competitive global cost structure. Over 25 countries are represented in our international network of suppliers. Additionally, we are parties to collective raw material sourcing contracts arranged through certain customers that allow us to obtain raw materials at pre-negotiated rates and help insulate us from market volatility across the industry for certain specialized metallic and composite raw materials used in the aerospace industry. We measure our success based on our ability to hedge risks associated with the costs of raw materials. We recognize that we procure raw materials that can be carbon-intensive. We plan to deepen our engagement with suppliers to encourage mitigation strategies. For example, we aim to ensure that 100% of our top suppliers have established science-based targets.

Comment

From time to time, we review our "make" versus "buy" strategy to determine whether it would be beneficial to us to outsource work that we currently produce in-house or vice versa.

C12.1b

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

Type of engagement

Collaboration & innovation

Details of engagement

Other, please specify (Efficiency collaborations, prototyping and advancement of low carbon technological innovations)

% of customers by number

100

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

0

Portfolio coverage (total or outstanding)

<Not Applicable>

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

Coverage is based on our key engagement activities with customers, which include Boeing and Airbus. The two customers comprised more than 90% of our revenues in 2019. Other customers include Aerion, Lockheed Martin, Northrop Grumman, Rolls-Royce and Sikorsky. Spirit AeroSystems is developing efficiencies at every step of the manufacturing process through our integrated teams, quality assurance programs and rapid response operations. We also drive efficiencies through our focus on factory automation. Recent investments in new and upgraded technology include robotics and other automated manufacturing processes. These new machines ensure greater precision and consistency for components delivered to the world's leading commercial aircraft programs. For our customers, Spirit is also pioneering advanced manufacturing technologies, such as out-of-autoclave composite manufacturing processes, and using resin-infusion technology including vacuum-assisted resin transfer molding. Additionally, Spirit's Inflexion® technology also eliminates the need for fasteners. Typically, composite structures are formed using rigid tools that must be removed from inside the product. This limits the complexity and size of the structures. Inflexion technology also enables large, complex composite aerostructures to be designed and built in one continuous piece, for products that are lighter, more affordable and more energy efficient.

Impact of engagement, including measures of success

We measure the impact of engagement based on our ability to enhance quality and lower costs, while supporting aviation decarbonization goals. We apply our extensive experience in advanced material systems, manufacturing technologies, and prototyping to continually invent and patent new technologies that improve quality, lower costs, and increase production capabilities. In our role as an OEM supplier, we also strive to be at the forefront of advancing solutions to reduce aviation industry net emissions 50% by 2050. To deliver on this industry target, the aviation industry has identified technological innovation – specifically increased fuel-efficiency, light-weight planes, electrification, hybrid technologies – as a top priority. As the world's largest supplier of composite aerostructures – producing over 2.5 million pounds of composite structures each year, we are uniquely positioned to support low-carbon technological innovations. Compared to metallics, composites reduce carbon emissions by 20% over the life of an aircraft. Composites are also 34-40% lighter than the equivalent metallic wings – which enables a 5-8% fuel burn savings through weight reduction alone. Spirit has recently applied its proprietary IRIS™ technology to produce a composite lower wing cover demonstrator. Targeted for a future composite wing, the innovations within the IRIS™ lower wing cover demonstrator combine for a wide array of energy savings and emission reductions both during manufacturing and over the life of the aircraft. The IRIS™ technology features a series of innovations, which apply Spirit's patented self-heated tooling and resin infusion technology, to produce the world's first composite lower wing cover demonstrator. Eliminating the need for large autoclaves and ovens, it also enables entirely new aircraft architectures, such as the blended wing body, which are estimated to achieve up to a 20% fuel savings compared to conventional aircraft designs. Future markets, such as urban air mobility, unmanned aerial vehicles, and high-performance marine vessels, could also benefit from the cycle time and operating costs reductions from these technologies.

C12.1d

(C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.

EMPLOYEES: We actively engaged our employees on climate-related and broader environmental issues. Employees are trained on Spirit's environmental policies and procedures. We also organize and encourage employee participation in local environmental restoration projects. For example, our employees recently participated in a volunteer activity to clean up with Arkansas River near our corporate headquarters.

LOCAL AGENCIES AND PARTNERS: We engaged local stakeholders and partners to support our decision to have our Wichita, Kansas operations be 100% powered by renewable energy. Spirit worked closely with Kansas public utility regulators to clear a path for the company's complete conversion to renewable wind-generated electricity at the facility, which is 12.8 million square-foot and represents more than 75% of the total square footage across all of our production facilities.

Utility regulators at the Kansas Corporation Commission approved a 10-year agreement filed jointly by the company and Evergy, Inc. that provides an updated electric rate structure. In return, Spirit has agreed to purchase Kansas wind-generated electricity, continue investing in capital improvements and make efforts to maintain stable or expanded operations in Wichita.

The choice of wind energy was a natural fit because the state of Kansas is known for providing strong and reliable wind supply. The new electric rates that Spirit will be paying address price disadvantages for electric service Spirit has experienced in Kansas compared to our operations in other states. We will also be supporting local economic development because the wind farm is located approximately 50 miles from our corporate headquarters.

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

Trade associations

Other

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

Yes

C12.3c

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association

Aerospace Industries Association (AIA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Since 2019, the Aerospace Industries Association (AIA) has served as a voice to the American aerospace and defense industry. CEO-level officers from across more than 300 member companies are participants. The AIA works with member company representatives through councils and committees to advise the government on critical issues and cultivate a unified perspective on the many challenges and opportunities facing the industry. The AIA advocates for (1) effective federal investments; (2) accelerated deployment of innovative technologies; (3) policies that enhance our global competitiveness; and (4) recruitment and retention efforts that support a capable and diverse 21st century workforce. The AIA has prioritized the environment as a top industry issues, and has committed to addressing climate change. (Further detail can be found at: <https://www.aia-aerospace.org/issue/environment/>.)

How have you influenced, or are you attempting to influence their position?

Our President and CEO serves on the AIA's Executive Committee. In his capacity as an Executive Committee member, he actively supports AIA's industry efforts to address environment and sustainability issues related to commercial aviation and other critical issues for the American aerospace and defense industry. Also, Spirit's President and CEO is chair of the AIA's Civil Aviation Leadership Council (CALC). This group comprises of CEOs from all the major civil aviation companies within AIA. The CALC has made environment/sustainability one of its key focus areas.

C12.3e

(C12.3e) Provide details of the other engagement activities that you undertake.

Our Senior Director of EHS, Security and Sustainability was appointed by the Governor of Kansas to serve on the Advisory Board of the Kansas Water Authority. Representing industrial water users in Kansas, he works with other public and private sector leaders in the state to effectively manage water resources.

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

Our processes to ensure that indirect activities are consistent with our overall climate change strategy are as follows: (1) Prior to entering into new affiliations or expanding the scope of current affiliations, an organization's policy positions are among the several factors that we would consider. (2) Through membership and participation, we would be able to monitor whether their activities are consistent with our climate and energy strategy. (3) Additionally, we utilize our disclosures to the CDP Climate Change program as an opportunity to further review and assess whether the public policy positions of trade associations for which Spirit Aerosystems has an affiliation are consistent with our own climate change strategy.

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 mainstream reports

Status

Complete

Attach the document

SPR006_Spirit-Aerosystems_2019-Annual-Report_Web.pdf

Page/Section reference

Page 9 of PDF ("2019 Highlights: Environment"); Page 24 of PDF ("Regulatory Matters: Environmental"); Pages 29, 36 and 37 ("Risk Factors"); and Page 55 of PDF ("Impact of Severe Weather Event")

Content elements

Strategy

Risks & opportunities

Comment

Climate change is listed as a specific risk factor in our 10-K filing within Spirit's 2019 Annual Report (page 20 printed, and page 36 of PDF). EHS commitment statement at <https://www.spiritaero.com/company/ethics-compliance/environment-health-safety/>

C15. 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.

C15.1

(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Senior Director - EHS, Security, Sustainability	Environment/Sustainability manager

SC. Supply chain module

SC0.0

(SC0.0) If you would like to do so, please provide a separate introduction to this module.

In 2020, Spirit AeroSystems (“Spirit”) has responded to the CDP Climate Change questionnaire and Supplier Module for the first time.

We appreciate your interest, and please let us know should you have any questions about our response.

Further context for our Supplier Module response is as follows:

INDUSTRY GOALS: We strive to make a measurable contribution to support the aviation industry’s climate goals from 2020-2050. As the world’s largest supplier of composite aerostructures, we believe that we are in a unique position to advance technological innovation – specifically driving the future of more fuel-efficient and lighter-weight planes.

PRODUCT INNOVATION: Spirit AeroSystems is continually applying its distinctive capabilities to reduce carbon emissions throughout the entire life cycle of aircraft development, manufacturing, operations, and retirement. A key example is Spirit’s Intelligent Resin Infusion System (IRIS™) technology. Spirit has recently applied its IRIS™ technology to produce a composite lower wing cover demonstrator.

Targeted for a future composite wing, the innovations within the IRIS™ lower wing cover demonstrator combine for a wide array of energy savings and emission reductions both during manufacturing and over the life of the aircraft. The IRIS™ features series of innovations, which applies Spirit’s patented self-heated tooling and resin infusion technology, to produce the world’s first composite lower wing cover demonstrator. A newly-developed combined inspection and metrology cell streamlines part validation by nearly 50%.

IRIS™’s combined design, material, simulation, fabrication, automation, and tooling innovations not only enable the 20% carbon emissions reduction possible with composite aircraft, but reduce manufacturing processing times by 20% and operating costs by nearly 30%. A corresponding similar reduction to overall equipment needs, floor space requirements, and energy usage required throughout the manufacturing process is also possible. During manufacturing, the self-heated tooling within the IRIS™ technology enables up to 50% energy savings compared to traditional autoclave curing of the composite material. Additionally, self-heated tooling technology eliminates the need for the many tons of nitrogen per year required to operate autoclaves during composite manufacturing.

The IRIS™ technology can also be applied to composite structures well beyond an aircraft’s lower wing cover, including vertical and horizontal tail planes and fairings. Eliminating the need for large autoclaves and ovens, it also enables entirely new aircraft architectures, such as the blended wing body, which are estimated to achieve up to a 20% fuel savings compared to conventional aircraft designs.

VALUES-BASED APPROACH: We are driven by our corporate values of transparency, collaboration and inspiration. We believe that adopting and incorporating Spirit values into day-to-day tasks and activities enables the company to be a trusted partner. Practicing transparency, collaboration and inspiration—individually and collectively—allows Spirit to be customer focused, provide on-time delivery, maintain and improve quality and ensure safety for all. These are the foundational outcomes that make Spirit a success which is why we are proud to call these four elements, “Spirit’s DNA.”

To reflect our values, Spirit made a significant investment decision that will enable the company’s largest facility in Wichita, Kansas to be 100% powered by renewable electricity by the end of 2020. The choice of wind energy was a natural fit because the state of Kansas is known for providing strong and reliable wind supply. We will also be supporting local economic development because the wind farm is located approximately 50 miles from our corporate headquarters.

SC0.1

(SC0.1) What is your company’s annual revenue for the stated reporting period?

	Annual Revenue
Row 1	7863000000

SC0.2

(SC0.2) Do you have an ISIN for your company that you would be willing to share with CDP?

Yes

SC0.2a

(SC0.2a) Please use the table below to share your ISIN.

	ISIN country code (2 letters)	ISIN numeric identifier and single check digit (10 numbers overall)
Row 1	US	8485741099

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.

Requesting member

Airbus SE

Scope of emissions

Scope 1

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO₂e

22905

Uncertainty (±%)

10

Major sources of emissions

In 2019, 33% of emissions were direct (Scope 1) and 67% emissions were indirect (Scope 2). The majority of our Scope 1 emissions are generated from natural gas consumption from manufacturing and assembly facilities. On-site diesel, gasoline, propane, and refrigerant usage were also accounted for in the Scope 1 emission calculations. The majority of Spirit's Scope 2 emissions are from purchased electricity at our corporate headquarters in Wichita, Kansas.

Verified

No

Allocation method

Allocation based on the volume of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

There were no material exclusions in our data boundary, which includes all manufacturing facilities. Data was collected using bills and invoices, and no significant assumptions were made in our GHG inventory. For the reported percentage of uncertainty, we aim to be conservative based on our methodology for attributing Spirit's Scope 1 and 2 emissions to Airbus. Reported emissions only reflect those from the manufacturing phase within the life cycle of our products.

Requesting member

Airbus SE

Scope of emissions

Scope 2

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO₂e

46105

Uncertainty (±%)

10

Major sources of emissions

In 2019, 33% of emissions were direct (Scope 1) and 67% emissions were indirect (Scope 2). The majority of our Scope 1 emissions are generated from natural gas consumption from manufacturing and assembly facilities. On-site diesel, gasoline, propane, and refrigerant usage were also accounted for in the Scope 1 emission calculations. The majority of Spirit's Scope 2 emissions are from purchased electricity at our corporate headquarters in Wichita, Kansas.

Verified

No

Allocation method

Allocation based on the volume of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

There were no material exclusions in our data boundary, which includes all manufacturing facilities. Data was collected using bills and invoices, and no significant assumptions were made in our GHG inventory. For the reported percentage of uncertainty, we aim to be conservative based on our methodology for attributing Spirit's Scope 1 and 2 emissions to Airbus. Reported emissions only reflect those from the manufacturing phase within the life cycle of our products.

SC1.2

(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).

We used The Greenhouse Gas Protocol, and applied global warming potentials based on the IPCC Fifth Assessment Report.

Greenhouse gas types in our data boundary are carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O) and hydrofluorocarbons (HFCs).

Our Scope 1 inventory includes the following fuels: natural gas, diesel, propane and gasoline. We used published emissions factors from United States Environmental Protection Agency – Emissions Factors for Greenhouse Gas Inventories (last modified April, 4, 2014).

Our Scope 2 inventory is primarily based on purchased electricity at our facilities in the United States (one site in Kansas, two sites in Oklahoma and one site in North Carolina). Our Scope 2 inventory also includes purchased electricity at our three international facilities, which are in Subang, Malaysia; Prestwick, Scotland and Saint-Nazaire, France.

For purchased electricity in the United States, we used the most current United States Environmental Protection Agency’s eGRID emissions factors, revised on March 9, 2020. For purchased electricity at international facilities, we used country-specific emission factors from the following published sources: The Ministry of Energy, Science, Technology, Environment & Climate Change’s GreenTech Malaysia factors, the UK Government GHG Conversion Factors for Company Reporting, and intensity factors from Electricité de France (EDF).

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	Because we have fixed energy consumption regardless of production volume, it is difficult to precisely determine the variable consumption for specific products and individual customers. Over the coming years, as we further monitor and understand specific drivers of our energy consumption, we will likely be able to allocate emissions to specific processes, products and customers with further precision. In the interim, we believe that the allocation based on revenue is most sound methodology. We welcome feedback from our customers on ways to allocate emissions to products with further precision.

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.

Within our Scope 1 and 2 emissions boundary, we plan to gain a better understanding on how changes in production volume correlate with annual changes in emissions. We also plan to gain a better understanding of the distinctions in production carbon intensity for specific products, including our fuselages, nacelles, struts/pylons, wing structures, and flight control surfaces.

Our Scope 1 and 2 emissions only reflect the manufacturing phase within the life cycle of our products. We aim to better quantify and reduce our Scope 3 emissions that cover procurement, transportation, distribution and customer use of aircraft that contains our products. Currently, we measure Scope 3 emissions from business travel, which are immaterial in the context of total value chain emissions and do not directly correspond with product life cycle emissions.

We aim to deepen engagement with our top suppliers and support them on the respective paths to develop and execute on science-based targets. We believe that our focus on materials innovation and resource efficiency will enable us to reduce Scope 3 emission from raw materials sourcing, product transport and product use.

For example, we estimate that Spirit's Intelligent Resin Infusion System (IRIS™) combined design, material, simulation, fabrication, automation, and tooling innovations can enable a 20% carbon emissions reduction with composite aircraft. During manufacturing, the self-heated tooling within the IRIS™ technology enables up to 50% energy savings compared to traditional autoclave curing of the composite material.

The IRIS™ technology can also be applied to composite structures well beyond an aircraft's lower wing cover, including vertical and horizontal tail planes and fairings. Eliminating the need for large autoclaves and ovens, it also enables entirely new aircraft architectures, such as the blended wing body, which are estimated to achieve up to a 20% fuel savings compared to conventional aircraft designs.

These estimated benefits are supported by the following key findings from academic and industry research:

- (1) Compared to a metallic aircraft, composites reduce carbon emissions by 20% over the life of an aircraft.
- (2) Composite wings are approximately 34-40% lighter than the equivalent metallic wings – this enables a 5-8% fuel burn savings through weight reduction alone.
- (3) Composite wings are also estimated to last up to 3x longer compared to metallic wings due to their improved fatigue properties.

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?
Yes

SC2.2a

(SC2.2a) Specify the requesting member(s) that have driven organizational-level emissions reduction initiatives, and provide information on the initiatives.

Requesting member

Airbus SE

Initiative ID

2018-ID1

Group type of project

New product or service

Type of project

New product or service that reduces customers products / services operational emissions

Description of the reduction initiative

Spirit has recently applied its Intelligent Resin Infusion System (IRIS™) technology to produce a composite lower wing cover demonstrator. Targeted for a future composite wing, the innovations within the IRIS™ lower wing cover demonstrator combine for a wide array of energy savings and emission reductions both during manufacturing and over the life of the aircraft. The IRIS™ features series of innovations, which applies Spirit's patented self-heated tooling and resin infusion technology, to produce the world's first composite lower wing cover demonstrator. A newly-developed combined inspection and metrology cell streamlines part validation by nearly 50%. Spirit was named a 2020 JEC Innovation Award Finalist for its IRIS™ technology. IRIS™'s combined design, material, simulation, fabrication, automation, and tooling innovations not only enable the 20% carbon emissions reduction possible with composite aircraft, but reduce manufacturing processing times by 20% and operating costs by nearly 30%. A corresponding similar reduction to overall equipment needs, floor space requirements, and energy usage required throughout the manufacturing process is also possible. During manufacturing, the self-heated tooling within the IRIS™ technology enables up to 50% energy savings compared to traditional autoclave curing of the composite material. The IRIS™ technology can also be applied to composite structures well beyond an aircraft's lower wing cover, including vertical and horizontal tail planes and fairings. Eliminating the need for large autoclaves and ovens, it also enables entirely new aircraft architectures, such as the blended wing body, which are estimated to achieve up to a 20% fuel savings compared to conventional aircraft designs.

Emissions reduction for the reporting year in metric tons of CO2e

Did you identify this opportunity as part of the CDP supply chain Action Exchange?

No

Would you be happy for CDP supply chain members to highlight this work in their external communication?

No

SC3.1

(SC3.1) Do you want to enroll in the 2020-2021 CDP Action Exchange initiative?

No

SC3.2

(SC3.2) Is your company a participating supplier in CDP's 2019-2020 Action Exchange initiative?

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 am submitting to	Public or Non-Public Submission	Are you ready to submit the additional Supply Chain Questions?
I am submitting my response	Investors Customers	Public	Yes, submit Supply Chain Questions now

Please confirm below

I have read and accept the applicable Terms