

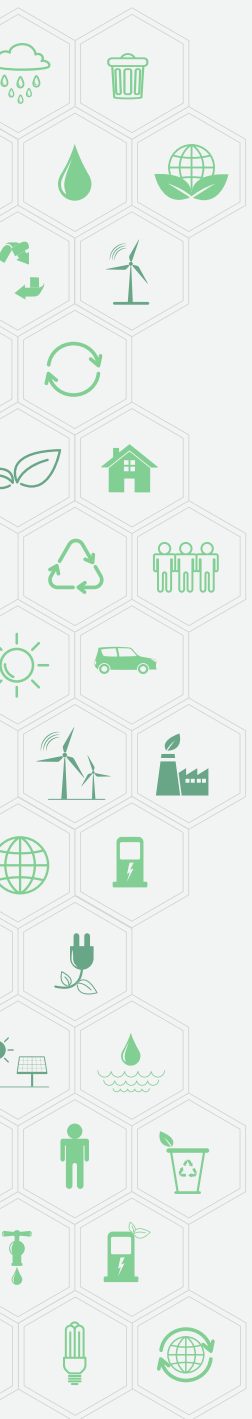
# Climate-Related Risks and Opportunities

Lockheed Martin Corporation



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# Introduction

At Lockheed Martin, we solve complex challenges, advance scientific discovery and deliver innovative solutions to help our customers keep people safe. Our commitment to sustainability includes a responsibility to mitigate climate risk and safeguard valuable resources. We seek to understand and address climate risks while capturing opportunities to strengthen our business model and operations. The information that follows is aligned with [Task Force on Climate-related Financial Disclosures](#) (TCFD) recommendations.



## Important Information About This Report

For purposes of this report, we used the Task Force on Climate-related Financial Disclosures risk framework, which differs from our approach to the disclosure of risks in our filings with the U.S. Securities and Exchange Commission (SEC). The inclusion of information contained in this report should not be construed as a characterization regarding the materiality of that information for purposes of our SEC filings. See also the caption Forward-Looking Statements at the end of this report for important information on forward-looking statements used in this report.

# Executive Summary

Lockheed Martin published its inaugural TCFD-aligned climate-related risks and opportunities report in 2020. This revision builds upon that report and leverages our refined data analysis to provide additional, quantitative considerations.

## Time Horizons

We use three time horizons when assessing climate-related risks and opportunities: short-term (1-3 years), medium-term (3-10 years), and long-term (beyond 10 years). Based on our assessment of plausible global economic, social, and environmental scenarios, we assess physical climate-related drivers in the long-term, while transitional drivers are assessed over the short- to medium-term.

## Geographic Scope

Physical climate-related risks are assessed across Lockheed Martin and supplier operations in the United States, where over 90% of employees and operations are located.

Transition risks (primarily carbon taxation) are assessed at the global level.

## Physical Risks

To quantify physical climate-related risk, we calculate the Value at Risk (VaR), which is the estimated expected average annual economic loss resulting from a particular natural hazard. VaR is calculated by applying the estimated likelihood of an event occurring in a given year and a historic loss ratio for such an event to the insurable value of the assets being assessed.

Our current analysis finds that the total 2021 annual VaR for all U.S. based climate risk hazards analyzed is not material and will not be material for the foreseeable future under any of the climate scenarios we modeled.

## Transition Risks

To quantify transition risks, we apply a hypothetical carbon price (tax) to our greenhouse gas (GHG) emissions.

A carbon tax in the range of \$20-100/MTCO<sub>2</sub>e on our Scope 1 and 2 energy-specific emissions would, if enacted, result in an annual financial impact ranging from \$13.7M – \$68.5M. These estimates are based on our 2022 emission levels.

The following tables summarize the two scenarios used for our analysis and the associated climate-related risks and opportunities.



## Scenario Assumptions

### Below 2°C Scenario

Lockheed Martin will face increasing physical climate risks now through 2050 because of the locked-in effects from past global GHG emissions. Many physical climate impacts will continue to increase and then plateau towards mid-century. Global average temperatures will slowly begin to decline after mid-century because of stringent, near-term regulation and policy to decarbonize globally. Such transition will likely increase the cost of doing business and may impact the affordability of our products and services, as well as others in our industry. Taking action to decarbonize may result in opportunities for competitive advantage.

### Above 2°C Scenario

Lockheed Martin will face increasing physical climate risks now until well beyond 2050 with low likelihood of plateau or decline through 2100. New climate policy or regulation is possible after 2050 in reaction to physical change. Customer needs are likely to change only minimally in the near-term related to efficiency and life cycle carbon due to limited pressure from government regulatory policy.



## CLIMATE-RELATED RISKS AT LOCKHEED MARTIN

- We have significant operations in geographic areas prone to climate-related risks, such as in California, Florida and Texas and certain of our properties have suffered damage from natural disasters in the past and may again in the future. We could incur significant costs to improve the climate resiliency of our infrastructure and supply chain and otherwise prepare for, respond to, and mitigate the effects of climate change.
- We may see indirect costs rise, such as increased energy or material costs, because of policies affecting other sectors of the economy. Scarcity and GHG-based costs are expected to drive up the cost of materials globally. As externalities are factored into product costs in the form of carbon pricing, Lockheed Martin may see costs rise throughout our supply chain. Although most of these increased costs likely would be recoverable through pricing, to the extent that the increase in our costs as a result of these policies is greater than our competitors', we may be less competitive on future bids or the total increased cost in our industry's products and services could result in lower demand from our customers.
- Future laws, regulations, or policies in response to concerns over GHG emissions, such as carbon taxes, mandatory reporting and disclosure obligations and changes in procurement policies, could significantly increase our direct and indirect operational and compliance burdens and costs. In the long-term, we expect placing a price on carbon will be a key driver towards integrating climate-related costs into market supply and demand. Although direct taxation is not currently applicable, Lockheed Martin is assessing the localized impact of carbon pricing on the cost of total energy procurement, product and supplier affordability and the potential impacts of proposed carbon pricing in legislation over time. In addition, climate change-related litigation and investigations have increased in recent years and any claims or investigations against us could be costly to defend and our business could be adversely affected by the outcome.
- Changes in government procurement laws that mandate or consider climate change considerations, such as the contractor's GHG emissions, lower emission products or other climate risks, in evaluating bids could result in costly changes to our operations or affect our competitiveness on future bids, or our ability to bid at all.
- As technological innovations lead to new markets and offerings, there is a risk that not all business ventures will succeed. Changes in customer preferences, shifts in market demand or outright program failure may increase the risk of unsuccessful climate-related business investments in the medium to long-term. Because climate-related risks require a variety of adaptation and mitigation options, there will also be a rush for first to market and early adoption opportunities which we expect would further exacerbate the traditional rate of failure for businesses reliant on technological innovations.





## CLIMATE-RELATED OPPORTUNITIES FOR LOCKHEED MARTIN

- Lockheed Martin has the opportunity to design, develop and innovate the use of new technologies to address climate-related risk globally. As a leader in technology and innovation, Lockheed Martin is positioned to directly support customer missions through technical solutions. This may take the form of energy, product design, efficiency, manufacturing, sustainment and operations. Our ability to capitalize on these opportunities depends significantly on the extent to which our customers demand technologies and solutions that address climate-related risks.
- Innovation and research and development are integral to the long-term resilience of Lockheed Martin's business model. Climate-related risks are expected to create opportunities across all sectors, and therefore continued innovation will be required to provide solutions to both our existing government customer base as well as expanding to adjacent customer bases. We have set goals to target directed investment and support in carbon removal technologies and financial support for organizations supporting multiple Sustainable Development Goals (SDGs), specifically SDG 7 – Affordable and Clean Energy.
- Many of our contracts with the U.S. government and other customers are for long-term programs; however, the needs of our customers may begin to shift as changes in the climate create new risks. Lockheed Martin will be well-positioned to address these changes through a continued focus on customer-oriented solutions.
- Advanced manufacturing and supply chain logistics are expected to create an opportunity for Lockheed Martin to reduce operational cost and improve production efficiencies. This may create opportunities for competitive advantage against peers in terms of product affordability, as well as reductions in material use, including energy and water, that may protect operations from climate-related supply shocks and price fluctuations.



# Strategy

Climate-related risk and opportunity drivers affect our long-term resiliency as a leader in global security and aerospace. We seek to understand and address how those drivers will affect our business.

Drivers are categorical risks and opportunities that are manifested via specific climate-related risks. For example, rising sea levels drive coastal flooding risk. We use three time horizons when assessing climate-related risks and opportunities: short-term (1-3 years), medium-term (3-10 years), and long-term (beyond 10 years). Physical climate-related drivers are assessed over the long-term, transition drivers over the short- to medium-term.

Our ongoing assessment and monitoring of these risks informs our risk management strategies outlined in our Sustainability Management Plan (SMP) and throughout our enterprise risk management planning.

## Impact Assessment

Our process begins by evaluating the risks and opportunities that a climate-focused universe of drivers presents to the Company and their relative likelihood and impact. Climate-related drivers meeting an internally set threshold for enhanced evaluation are further assessed at the appropriate business segment. This approach identifies qualitative climate-related drivers to be modeled quantitatively for better understanding of their overall level of significance and impact.

Our qualitative scenarios are based on two hypothetical futures: global temperatures warming to no more than 2°C by 2100 (aligning with [Representative Concentration Pathway](#) (RCP) 1.9 and RCP 2.6); and global temperatures rising above 2°C by 2100 (aligning with RCP 4.5 and RCP 8.5). These scenarios draw on scientific data to project the potential effects of climate change and global warming, and the socio-economic requirements projected to meet different global transition strategies.

Lockheed Martin evaluates the estimated relative likelihood and impact of climate-related risks and opportunity drivers on our facilities (any site under Lockheed Martin operational control), production operations, workforce, and supply chain. Each stakeholder category represents a unique application of adaptation or mitigation within our value chain. For each scenario there are multiple sub-strategies used to incorporate variability in key performance measures representing both physical and transition drivers and risks. These scenarios use the [Shared Socioeconomic Pathways](#) (SSP) and [Integrated Assessment Model](#) data to determine boundaries for physical and transition changes projected in 2030 (near) and 2100 (long). The SSPs provide insight into the extent that policy and socioeconomic drivers will need to shift globally, and regionally, to achieve each desired physical outcome in terms of global average temperature rise.

SSP119 and SSP126 are used to set the parameters for our Below 2°C scenario and align with physical climate projections under RCP 1.9 and RCP 2.6, respectively. The Above 2°C scenario utilizes SSP245 and SSP585 as more extreme cases of physical change. These SSPs align with RCPs 4.5 and 8.5, respectively.

More than 120 distinct climate-related risks, based on 22 distinct risk drivers, are assessed under both hypothetical scenarios. Risks are assessed based on their anticipated likelihood and the relative impact of each risk driver on our facilities, production operations, workforce and supply chain. Based on our methodology, the risk assessments identified that we may face increased physical risk from extreme weather and transition risk because of unabated emissions.





# Quantifying Physical Climate-related Risks

## Methodology

To assess physical risk, we utilize the U.S. Federal Emergency Management Agency's (FEMA's) National Risk Index (NRI), a tool to help illustrate the U.S. communities most at risk for 18 natural hazards. Of the 18 natural risk hazards, we consider nine to be more directly affected by climate change: Coastal Flooding, Cold Wave, Drought, Heat Wave, Hurricane, Riverine Flooding, Strong Wind, Wildfire and Winter Weather.

The NRI provides risk hazard ratings and annual likelihood estimates by U.S. Census Tract but does not include Puerto Rico. Global resources are also not publicly available to provide the same level of risk assessment.

Using FEMA's methodology for Expected Annual Loss, used in the NRI, we have modified the formula to calculate an annual Value at Risk (VaR) value based on annual insurable value for Lockheed Martin assets and contract commitments for a sampling of suppliers; this is instead of "Exposure" as used in the NRI. Annual VaR statistically represents the expected loss from the selected nine climate-related natural hazards annually. It is hypothetical and in any given year actual losses may be significantly lower or higher than the calculated VaR. The variables used to calculate the VAR are: Annualized Frequency (based on NRI data), Historical Loss Ratio (based on NRI data), and Insurable Value/Contract Value (based on Lockheed Martin data).

The variables are subject to judgment and thousands of underlying assumptions; a change in one or more of the variables may have a significant effect on the calculated VaR. The analysis contained in this report is based on 2021 actuals, which is the latest data available at the time of this report.

## Impact on Lockheed Martin Assets, Programs and Suppliers

The analysis shows that the annual VaR for all U.S. based assets is immaterial for Lockheed Martin sites and assessed suppliers.

Climate-related natural hazards are geographically specific. Climate change is expected to shift and amplify the occurrence of these hazards, but the expected impacts are highly uncertain. Given the future uncertainty we, like FEMA, use historical impact data to determine where natural hazard events are most likely to occur. As a result, each natural hazard is a unique risk. Assets are defined as individual data points in our analysis and represent individual buildings within our operations data or the location in the supplier data.



## F-35 Climate-related Risks

The F-35 program is Lockheed Martin's largest program by revenue. For purposes of our VaR modeling, we limit our operational risk associated with the F-35 program to our Fort Worth, Texas, facility, where F-35s are manufactured. However, the Lockheed Martin F-35 operations and domestic supplier base for the F-35 program is more geographically distributed. Using our supplier dataset, we assign program designations based on descriptions of each data point. These designations could be helpful in isolating data points for programs for supplier risk analysis. The supplier dataset is also limited to those datapoints that are attributed to sole and single source suppliers. This attribute aligns with a core area of concern since impacts and resilience of these suppliers become more critical to sustaining manufacturing operations and delivery schedules for our customers.

Each U.S.-based supplier (151 single or sole sourced) is geolocated with the NRI dataset by U.S. Census Tract and combined with both qualitative and quantitative risk hazard data. Instead of Insurable Value used for Lockheed Martin Assets, the purchase order commitment of each supplier is used to determine the value for purposes of the VaR calculation. This value is then multiplied by the likelihood of an annual event by risk hazard and the historic loss ratio to determine the VaR associated with a supplier site.

### F-35 Physical Risk Findings

Riverine flooding is the most pronounced risk by VaR followed by wildfire. These risk hazards represent 86% and 7.7% of the VaR, respectively. Coastal flooding is third with 2.4% of the total VaR.



# Quantifying Transition Climate-related Risks

Lockheed Martin evaluates the regulatory-driven climate risk of increased pricing of GHG emissions. In the U.S., only California operates a cap-and-trade program requiring facilities to offset a percentage of their GHG emissions. However, a carbon-based tax is a reasonable expectation when assessing our global operations.

Lockheed Martin manages this risk by stress testing historical cost implications of localized emissions against localized energy expenditures, and through efforts to decarbonize and conserve energy based on per capita metrics.

A carbon tax in the range of \$20-100/MTCO<sub>2</sub>e on our Scope 1 & 2 energy-specific emissions would, if enacted, result in an annual financial impact ranging from \$13.7M – \$68.5M. These estimates are based on our 2022 emission levels.

The tax rates of \$20 and \$100 per MTCO<sub>2</sub>e used in the financial impact estimates provide a range in relative aggressiveness and are based on analyses of recommended science-based CO<sub>2</sub> tax rates in 2020. Sources include proposed Congressional bills, the World Bank, High-Level Commission on Carbon Price, Shared Socio-Economic Pathways and Carbon Pricing Corridors Initiative.

## Select Transition Opportunities

*Products and services – new products or services through innovation and research & development (R&D)*

At Lockheed Martin, we develop instruments and other technologies that monitor the climate from space, land and sea to support our customers in protecting and strengthening global infrastructure. We are principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products, and services that improve and promote long-term capabilities in national security, space exploration and information technology.

As a company driven to provide technical solutions to the most complex challenges of our customers, we expect our portfolio to expand to meet their needs, including to address climate change and adaptation solutions, which present us with numerous climate-related opportunities. In certain cases, our customers have shaped product development and features based on climate-related risks and opportunities. For example, the GOES satellite series is designed to improve climate, ocean, environmental and weather forecasting by providing faster and more detailed data in real time; the current C-130J/LM-100J aircraft is more fuel efficient than its predecessors; the Sikorsky FIREHAWK modification of the Blackhawk platform to fight fires; the GridStar Flow long-duration energy storage demonstrates grid resilience for the U.S. Army at Fort Carson. Growing resource constraints and changes to our climate will require technologies that strengthen society's resilience and provide solutions for monitoring and addressing impacts for climate change mitigation.

Our ability to capitalize on these opportunities depends significantly on the extent to which our customers support research and development, and/or demand technologies and solutions that address climate-related risks.



# Risk Management

Our sustainability strategy is shaped by a structured approach used to determine our most relevant sustainability issues, objectives and performance measures. At Lockheed Martin we consider a strong relationship among sustainability, strategy and enterprise risk management to be critical.

Risk management processes addressing acute physical climate-related risks are monitored and managed through our Business Continuity and Crisis Management programs. Business Continuity outlines the preparation needed in anticipation of significant incidents that may disrupt business operations. Crisis Management promotes preparedness and response with the goal of protecting Lockheed Martin employees against injury and illness and minimizing damage to Lockheed Martin's assets.

Our Crisis Management and Business Continuity programs establish a strategic framework that directs prompt mobilization of resources to protect Lockheed Martin employees and assets prior to, during, and after an emergency. These functions were critical in restoring operations to our facilities impacted by severe natural disasters over the last few years. In 2020, a cross-functional exercise was conducted focusing on climate change by testing physical risks for all U.S. based facilities in our Enterprise Operations business segment. Results and tools identified during this exercise were shared with all business areas in 2021.

Our Environment, Safety, and Health (ESH) Leadership Council and Facilities Leadership Team set the strategic direction and goals for energy management and procurement to drive efficiency, avoid costs, and reduce carbon emissions associated with our facilities.

## Risk Identification:

We monitor a dynamic risk universe that includes ESG topics prevalent in voluntary frameworks, mandatory regulations, and internally identified sources.

## Risk Assessment:

We prioritize and evaluate assumptions from a diverse set of risk topics relevant to strategic and operational objectives. This includes examining environmental and social factors applicable to risk topics in our business.

## Risk Controls and Mitigation:

Through the Risk Audit Strategy Board, which conducts a periodic, rigorous examination of the intersection between our Enterprise Risk Matrix and our internal audit plan, we respond to risks related to several ESG factors, and we track, measure and report our performance for greater transparency. This process also informs how we evaluate the effectiveness of controls for risk elements identified through our enterprise risk assessments, ethics and business conduct process and internal audits.

# Governance

Please refer to Lockheed Martin's [Sustainability Website](#) or a description of our sustainability governance.



# Metrics and Targets

Lockheed Martin's business strategy, including related to climate change, is influenced by our stakeholders including employees, academic institutions, investors, non-governmental organizations, customers, policy organizations, suppliers and analysts. In 2013, Lockheed Martin conducted its initial core issues assessment ("ESG materiality") to evaluate the relative importance and impacts of sustainability factors to our value chain and stakeholders.

In 2019, we formally reassessed our priority sustainability issues based on the Company's evolving business portfolio and stakeholder values regarding the economic, social, and environmental aspects of our business model. The resulting Sustainability Management Plan, and a description of our climate-related goals, can be found in our Sustainability Report available on Lockheed Martin's [ESG Portal](#).

## Climate-Related Data and Measurements

Lockheed Martin publishes climate-related data and metrics via our [ESG Performance Index](#).

### Forward-Looking Statements

This report contains statements which, to the extent not recitations of historical fact, constitute forward-looking statements within the meaning of the federal securities laws. The words "will," "enable," "expect," "plan," "forecast," "anticipate," "continue," "achieve," "scheduled," "estimate," "believe," "intend," "aim," "orient," "goal," and similar expressions are intended to identify forward-looking statements. Statements and assumptions with respect to expected losses or costs, achievement of goals and objectives; anticipated actions to meet goals and objectives; allocation of resources; planned, encouraged, or anticipated actions; planned performance of technology; or other efforts are also examples of forward-looking statements.

Forward-looking statements are based on our current expectations and assumptions, are not guarantees of future performance, and are subject to risks and uncertainties. Actual results could differ materially due to factors such as (i) the accuracy of our estimates and assumptions, including the assumptions underlying the Value at Risk calculation, the selected hypothetical climate scenario analysis, and the inherent uncertainty and limitations in scenarios attempting to model world climate and human reaction over a multi-decade period; (ii) our ability to achieve reductions in energy use, greenhouse gas emissions and other sustainability goals and objectives; (iii) changes in our priorities as well as changes in the priorities of our customers and suppliers; (iv) the amount of our future investments; (v) the future effect of legislation, rulemaking and changes in policy; (vi) the impact of acquisitions or divestitures or other changes in our employee or product and service base; (vii) the competitive environment; (viii) the ability to attract and retain personnel and suppliers with technical and other skills; (ix) our ability to develop and commercialize new technologies and products; (x) the willingness of suppliers to adopt and comply with our programs; and (xi) global economic, business, political, and climate conditions.

These are only some of the factors that may affect the forward-looking statements contained in this report. For further information regarding risks and uncertainties associated with our business, please refer to our U.S. Securities and Exchange Commission (SEC) filings including our Annual Report on Form 10-K, and our subsequent Quarterly Reports on Form 10-Q, which can be obtained at our website [www.lockheedmartin.com/investor](http://www.lockheedmartin.com/investor) or through the website maintained by the SEC at [www.sec.gov](http://www.sec.gov). The forward-looking statements in this report are intended to be subject to the safe harbor protection provided by federal securities laws.



