

CLIMATE-RELATED RISKS AND OPPORTUNITIES

Lockheed Martin Corporation

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INTRODUCTION

Climate risks and opportunities impact Lockheed Martin’s long-term resiliency as a leader in global security and aerospace. It is our responsibility to understand, and actively address climate risks while leveraging opportunities to foster a strong business model for the future. The information that follows is aligned with Task Force on Climate-related Financial Disclosures (TCFD) recommendations in the areas of Governance, Strategy and Risk Management, and Metrics and Targets.



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.

GOVERNANCE

Lockheed Martin’s sustainability governance structure is made up of our Board of Directors, executive leadership team, and key functional leaders responsible for sustainability initiatives, including climate-related risks and opportunities. Our lead sustainability executive is the Senior Vice President, Ethics and Enterprise Assurance, who reports to the President and CEO and oversees ethics; enterprise risk; environment, safety and health; internal audit; and sustainability. Incentive compensation for Lockheed Martin executives is linked to sustainability factors that we measure and report, including on topics of climate-related risk and opportunity. See our 2020 Proxy Statement for details. Our Corporate Sustainability Policy guides integration across the business, and our five-year Sustainability Management Plan guides our progress toward meeting our sustainability goals and priorities. The Nominating and Corporate Governance Committee (Governance Committee) has oversight responsibilities relating to the Corporation’s ethical conduct, environmental stewardship, corporate culture, philanthropy, workforce diversity, and health and safety — all of which are linked to our sustainability commitments and performance. The Governance Committee reviews performance against the SMP, including progress on goals with respect to energy use and carbon emissions, and approves the Corporation’s annual Sustainability Report.



STRATEGY AND RISK MANAGEMENT

Climate-related risk and opportunity drivers are key considerations for our long-term success and resiliency as a leader in global security and aerospace. We believe it is our responsibility to understand, and actively address how those drivers will affect our business. Our assessment process identifies key physical and transitional drivers qualitatively in the short, medium, and long-term.

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). 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.

Our ongoing research and monitoring of these risks informs our risk management strategies outlined in our SMP and Enterprise Risk Management Plan, as applicable.

Financial and Strategic Impact Assessment

Lockheed Martin takes a qualitative approach to analyzing the financial and strategic impacts of relevant climate-related risks to our business. Our process begins by evaluating the risks and opportunities that a climate-focused universe of drivers presents to the Corporation and their relative likelihood and impact. Individual climate-related drivers that meet an internally-set threshold for enhanced evaluation are further assessed at the appropriate business segment. Furthermore, this approach identifies certain climate-related drivers to be modeled quantitatively for better understanding of their overall level of significance.

Our qualitative climate-scenario analysis and risk assessment is based on two possible futures: global temperatures warming to no more than 2°C by 2100 (aligning with [Representative Concentration Pathway](#) (RCP) 2.6); and global temperatures rising above 2°C by 2100 (aligning with RCP 8.5). These scenarios draw on scientific data to project the potential effects of climate change and global warming. In order to assess climate-related risk and opportunity drivers, Lockheed Martin evaluated the likelihood and impact on our facilities, production operations, workforce, and supply chain. In considering the potential outcome of these two scenarios, there are multiple sub-strategies used to incorporate variability in key performance measures representing both physical and transitional drivers and risks. For both scenarios we used [Shared Socioeconomic Pathways](#) (SSP) and [Integrated Assessment Model](#) data to determine boundaries for impact trajectories in 2030 and 2100.

Additional Scenario Definition and Assumptions are Summarized as Follows:

BELOW 2°C SCENARIO

Lockheed Martin will face increasing physical climate risks now through 2050 as a result of the locked in effects from past global greenhouse gas emissions. Many physical climate impacts will plateau then slowly decline over time as a result 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 the Aerospace and Defense sector. Taking action to decarbonize will 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 and will increase steeply. 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.

More than 120 distinct climate-related risks, based on 22 distinct risk drivers, were assessed based on both sets of scenario parameters. Risks were assessed qualitatively based on their likelihood and relative impact of each risk driver on our facilities, production operations, supply chain and workforce. These calculated risk assessment results identify key climate-related risks. Our latest risk assessment is expected to be integrated into strategic planning at the functional level and individual physical risks are being considered in business continuity planning exercises in 2020 involving multiple facilities.

The Key Climate-Related Risk Drivers in Our Below 2°C Scenario are as Follows:

ACUTE (PHYSICAL RISK) – INCREASED SEVERITY OF EXTREME WEATHER (HEAT)

Global temperature rise is expected to manifest in longer duration heat waves, as well as localized temperature spikes well above the current norm. At Lockheed Martin, we are analyzing the associated impacts of shifts in the quantity of heating and cooling degree days over time and the strategic impacts to our operations. Additionally, extended duration heat events and excessive temperatures have been shown in external research to reduce workforce productivity and constrain activities requiring optimal testing conditions for many of our products.

POLICY AND LEGAL (TRANSITION RISK) – INCREASED PRICING OF GHG EMISSIONS

The potential impact of carbon taxation on Lockheed Martin's facilities is actively modeled through the relationship of carbon tax-based costs with our historical energy-based emissions and procurement costs. An impact threshold is then applied to understand where decarbonization and energy efficiency efforts would be most impactful in our operations.

Like our operational approach, we also apply carbon tax modeling to our supply chain costs and our estimates of Scope 3 emissions for our Purchased Goods and Services/Capital Goods, globally. Although the modeled costs are not directly incurred by Lockheed Martin there is a potential for impact to the affordability of our products.

The Key Climate-Related Risk Drivers in Our Above 2°C Scenario are as Follows:

ACUTE (PHYSICAL RISK) – INCREASED SEVERITY OF EXTREME WEATHER (HEAT, STORMS), EXPOSURE TO DROUGHT (WATER SCARCITY, WILDFIRES)

Climate change is expected to increase the strength and pace of storms and other weather-related events. The level of impact varies based on the location of our operations and supply chain and is not limited to coastal regions. In addition to hurricanes and flooding, other weather-related events such as tornados and wildfires will have a continued impact on our supply chain, direct operations, and the livelihoods of our workforce and families. As risks increase so too will the cost of operations and the potential for operational schedule delays and missed program milestones. Future weather events are expected to grow more severe, with potential greater impact.

Key Climate-Related Opportunity drivers at Lockheed Martin:

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 would expect our portfolio to expand to meet their needs, including to address climate change and adaptation solutions, which presents 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 15% more fuel efficient than its predecessors. 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 mitigation.

Managing Climate-Related Risk and Opportunity

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, ethics, and enterprise risk to be critical.

Risk management is a logical extension of sustainability, which helps us to mitigate risk and keep our business viable not just for the next quarter, but for the next quarter century and beyond. To better reflect the deep connections between the two, Corporate Sustainability and Enterprise Risk Management (ERM) are aligned under one department managed by our Director of Enterprise Risk and Sustainability. This alignment enables us to identify risks beyond near-term timeframes where climate change risks are likely to mature.

Risk management processes addressing acute physical climate-related risks are monitored and managed through our business continuity and crisis management functions. 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 employees against injury and illness and minimizing damage to Lockheed Martin's assets.

Enterprise risk and sustainability are mutually reinforced through the following processes:

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.

Our Crisis Management program establishes a strategic framework that directs prompt mobilization of resources to protect employees and Lockheed Martin 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, these partnered with the Corporate Sustainability Office to conduct the first exercise focused on climate change by testing physical and transitional risks for all US based facilities in our Enterprise Operations business area.

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. Operational ESH performance is reviewed by the Nominating and Corporate Governance Committee of our Board of Directors. Lockheed Martin has evaluated the applicability of the science-based target methodology and established our own ambitious carbon reduction goal to do our part in holding global temperature increase below 1.5 degrees C by 2100. We believe this goal will not only outperform the science-based target methodology for reducing emissions but will also support the continued growth of the company. The fourth generation of our Go Green goals address GHG emissions, energy, and waste on an intensity basis across our facilities (rather than on an absolute basis) and will be measured on a per occupant basis. Setting these ambitious targets is intended to help drive a lean and efficient infrastructure, processes, and operations that support our continued leadership in a changing business and regulatory environment.

We also partner with the U.S. Department of Energy's Better Plants Program and the U.S. Environmental Protection Agency's ENERGY STAR Program and Green Power Partnership to support our ongoing energy management. We benefit from the resources, expertise, and valuable peer networking opportunities offered through these partnerships, which help us achieve our energy and carbon reduction goals.

Since the inception of our Go Green Program in 2007, we have reduced carbon emissions by more than 45%, energy by 25%, water by 40%, and waste since 2014 by 12%. These reductions are attributed to persistent efforts across the enterprise to improve efficiency gains from a combination of energy and water projects involving HVAC systems, controls, cooling towers, irrigation, and lighting.

MANAGING CLIMATE-RISKS AT LOCKHEED MARTIN

Climate change is directly impacting the strength and pace of storms and other weather-related events. The level of impact varies based on the location of our operations and supply chain and is not limited to just coastal regions. In addition to hurricanes and flooding, other weather-related events such as tornadoes and wildfires will have a continued impact on our supply chain and operations.

Sea level rise poses a risk to coastal communities and the operations of Lockheed Martin and suppliers located near coastal areas. Although the effects are chronic, weather events also are expected to be exacerbated as a result of individual events. The impact may be both direct in the form of asset isolation due to infrastructure closures, or indirect in the case of supply chain disruptions. Lockheed Martin uses academic data to understand regional risks related to sea level rise for both our direct operations and our network of suppliers.

Scarcity and carbon-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. As we expect many of these costs will be considered allowable to our government customers, there is potential for the costs to impact product affordability. Our ongoing research related to carbon pricing is providing actionable insight for our Global Supply Chain Operations function which supports suppliers through programs designed to improve operational carbon intensity and overall energy efficiency.

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.

As technological innovations lead to new markets and offerings, there is a risk that not all business ventures will succeed. Changes in consumer 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.

REALIZING CLIMATE-RELATED OPPORTUNITIES FOR LOCKHEED MARTIN

Lockheed Martin has significant 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.

Innovation and R&D 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. For example, our current LM Energy strategy is to provide products to address DoD operational energy needs in the near-term through energy storage solutions, but these products may also have commercial and other government applications.

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 insulate operations from climate-related supply shocks and price fluctuations.

METRICS AND TARGETS

Sustainability Management Plan

We look at sustainability through immediate, near-term, and long-term lenses to ensure we maintain a future-focused agenda. This includes updating our sustainability strategy through a structured process that includes reviewing stakeholder feedback, enterprise risk mitigation plans, reporting standards, and current and emerging trends. We seek to improve business practices to best serve our customers, employees, and other stakeholders across our core sustainability issues. Each issue has Tier 1 factors — the areas we strategically manage for significant impact — with goal completion dates by 2020.

Our current Sustainability Management Plan includes six Tier 1 factors and goals that are climate related. The following table details each goal and our performance through 2019.

For a more detailed discussion of our Sustainability Management Plan please reference our [2019 Sustainability Report](#).

Core Issue	Sustainability Factor	Sustainability Goal (Climate-Related Only)	Target Year	Performance (YE2019)	Climate-related relevance
Product Impact	Total Cost of Ownership	Generate \$1B of lifecycle cost reductions from manufactured products related to the use of resources and impacts on human health and the environment	2020	In 2018, we exceeded our goal of cumulative modeled life-cycle cost savings of \$1.34 billion. During 2019, we adapted our life-cycle assessment capabilities to other programs such as supply chain impact and chemical stewardship.	Our life cycle assessment studies look at the environmental impacts to both human health and the environment. Atmospheric emissions are a key impact category, as are the direct and indirect (social) costs of the modeled impacts.
Product Impact	Global Infrastructure Needs	Grow to \$4B product sales with direct, measurable benefits to energy and infrastructure resiliency.	2020	We exceeded this goal during 2019 with product sales that benefit energy and infrastructure resiliency totaling \$4.5 billion.	Lockheed Martin is a major global contributor to advanced infrastructure and energy technologies. Growing this area of our business is not only good for the company but is also good for a global society.
Resource Efficiency	Energy and Carbon Management	Reduce energy use by 25%, scope 1-2 carbon emissions by 35% and water use by 30%	2020	Since 2010, we have reduced energy use by 22%, carbon emissions by 39% and water use by 20%. Reductions in energy and water use slowed during 2019 due to an increase in production activity.	Energy, carbon, and water are core environmental impact measures that are leading indicators of climate related risk but are also measures of early adoption of the opportunities for transitioning to a more resilient organization.
Resource Efficiency	Energy and Carbon Management	Increase green footprint of owned, leased and operated facilities, based on U.S. and global standards	2020	We operated 24 Leadership in Energy and Environment Design (LEED), one Building Research Establishment Environmental Assessment Method (BREEAM), and nine ENERGY STAR certified buildings, totaling 3.5 million sq. ft. of green buildings, an increase of 45% since 2015.	Through multiple certification authorities globally, Lockheed Martin strives to operate with facilities that reduce the overall impact to the environment and the flow of resources required.
Resource Efficiency	Energy and Carbon Management	Increase renewable energy usage across business operations on an annual (year over year) basis through 2020.	2020	During 2019 we consumed 321,941 megawatt hours (MWh) of clean energy, comprising 307,782 MWh of renewable energy certificates (RECs) and 14,159 MWh of on-site energy generation. In 2018, we consumed 307,378 MWh of renewable energy.	As a global manufacturer demands for energy are higher than in other industries. On-site renewable energy projects and the purchase of RECs are part of the current strategy to reduce our dependence on higher emitting sources of energy.
Resource Efficiency	Energy and Carbon Management	Deliver energy customer solutions that enable carbon savings $\geq 2X$ the carbon footprint of our operations	2020	With the divestiture of our Distributed Energy Solutions Group in 2019, we have retired this goal as of the end of 2019. At the time of the sale, Lockheed Martin Energy enabled carbon emissions savings of 1,027,634 metric tonnes of carbon dioxide equivalent (MTCO _{2e}) for our customers, compared to our operational emissions, net of RECs, of 775,997 MTCO _{2e} . This is a ratio of 1.32, down from 1.54 in 2018, due to not being able to report full-year performance.	Through our LM Energy line of business, Lockheed Martin provides a variety of energy management and efficiency services to reduce the overall emissions of our customers. Climate related risks and opportunities are not just those that impact Lockheed Martin but are also those that impact our customers and their customers.

Evolving Our Sustainability Priorities and Core Issues Beyond 2020

Lockheed Martin's business strategy, including related to climate change, has been 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 reassessed our priority sustainability issues based on the Corporation's evolving business portfolio and stakeholder values regarding the economic, social and environmental aspects of our business model. One of these priority areas, Advancing Resource Stewardship, comprises four climate-related Core Issues: energy management, hazardous chemicals and materials, resource supply vulnerability, and total cost of ownership. For 2021 a renewed Sustainability Management Plan (SMP) will be deployed with performance metrics and targets extending as far as 2030.

We look at sustainability through immediate, near-term, and long-term lenses to ensure we maintain a future-focused agenda.

Climate-Related Data and Measurements

		2019	2018	2017	2016
Greenhouse Gas Emissions	Scope 1 Emissions (MtCO ₂ e)	305,362	291,782	291,523	302,216
	Scope 2 Emissions (Location-Based, MtCO ₂ e)	662,659	673,108	745,682	806,612
	Scope 2 Emissions (Market-Based, MtCO ₂ e)	466,073	527,766	552,851	615,956
	Scope 3 Emissions (MtCO ₂ e)	30,584,500	30,551,000	30,545,000	30,527,708
	- Purchased Goods and Services	7,700,000	7,700,000	7,700,000	7,684,895
	- Fuel and Energy Related Activities	105,000	90,000	100,000	90,772
	- Capital Goods	370,000	370,000	370,000	369,078
	- Waste Generated in Operations	4,500	11,000	5,000	4,115
	- Business Travel	190,000	170,000	170,000	164,311
	- Employee Commuting	215,000	210,000	200,000	228,215
	- Use of Sold Products	22,000,000	22,000,000	22,000,000	21,986,322
Energy	Total Energy Consumption (MMBtu)	9,054,301	9,421,456	8,948,579	8,173,216
Green Power	Total Green Power (incl. RECs) (MWh)	321,941	307,378	303,000	300,000
Waste	Waste Generated (lbs.)	61,566,290	60,631,125	59,578,521	49,030,627
Water	Water Used (gal)	1.360B	1.323B	1.324B	1.159B
Science Based Targets	Context Based Score	0.637	0.684	0.755	0.883



Forward-Looking Statements

This report contains statements that, to the extent they are not recitations of historical fact, constitute forward-looking statements within the meaning of the federal securities laws, and are based on our current expectations and assumptions. The words “believe,” “estimate,” “anticipate,” “project,” “intend,” “expect,” “plan,” “outlook,” “scheduled,” “forecast” and similar expressions are intended to identify forward-looking statements. These statements are not guarantees of future performance and are subject to risks and uncertainties. For a discussion identifying additional important factors that could cause actual results to differ materially from those anticipated in the forward-looking statements, see our filings with the SEC including, but not limited to, “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and “Risk Factors” in our Annual Report on Form 10-K for the year ended December 31, 2019 and subsequent Quarterly Reports on Form 10-Q. Our filings may be accessed through the Investor Relations page of our website, www.lockheedmartin.com/investor, or through the website maintained by the SEC at www.sec.gov. Given the uncertainties, forward-looking statements should not be relied on in making investment decisions. The forward-looking statements contained herein speak only as of the date of this report. Except where required by applicable law, we expressly disclaim a duty to provide updates to forward-looking statements after the date of this report to reflect subsequent events, changed circumstances, changes in expectations, or the estimates and assumptions associated with them. The forward-looking statements in this report are intended to be subject to the safe harbor protection provided by the federal securities laws.