

NORTHROP GRUMMAN



2022 TCFD Report

FOLLOWING THE RECOMMENDATIONS OF THE TASK
FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

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A Message from Our Chief Sustainability Officer

Climate change is a global priority. Northrop Grumman is committed to understanding climate science and developing effective solutions to address current and future challenges facing our planet. Increased frequency of natural disasters, population displacements and conflicts over necessities like food, water and materials impact all of us – regardless of industry, discipline or income. We have an important role to play and are committed to helping to ensure a more sustainable future for people and the planet.

Northrop Grumman is proud of our industry leadership position on corporate responsibility and Environmental, Social and Governance (ESG) reporting. We issued our first corporate responsibility report almost 15 years ago, and in the years since, have highlighted where we have taken action to address the climate challenge. Earlier this month, we released our 2021 Sustainability Report and announced new sustainability goals, including net zero greenhouse gas (GHG) emissions in our operations by 2035. This is yet another step in our sustainability journey as we commit to being a leader in our industry.

We are building on our strong environmental record with the publication of Northrop Grumman's first Task Force on Climate-related Financial Disclosures (TCFD) report. This

report provides additional transparency around our approach to managing climate-related risks and opportunities across our business and how we develop technology to support a more sustainable future.

Northrop Grumman stands at the forefront of solving the world's toughest challenges – including sustainability. Redefining what it means to be a global steward is a continuous process, but through our spirit of Defining Possible, we're building towards the reality of a safer and more sustainable planet.



Mike Witt

Mike Witt
Northrop Grumman
Chief Sustainability Officer



About This Report

Northrop Grumman, as a leading global aerospace and defense (A&D) company, recognizes the role we play in environmental stewardship, as well as the impact climate-related risks and opportunities may have on businesses, including our own and our suppliers. We are proud to produce this TCFD report. Our Environmental Sustainability Program team, since its inception in 2008, has been key to reducing our environmental footprint by improving operational efficiency, integrating environmental sustainability practices into our operations and increasing our awareness of climate change and its associated risks and opportunities.

This report reflects our commitment to transparency in climate-related disclosures. The report is structured in line with each of the four TCFD pillars – Governance, Risk Management, Strategy and Metrics and Targets – and describes ways in which Northrop Grumman integrates consideration of climate-related issues into its business practices.



DISCLOSURE STATEMENT

This TCFD report contains statements that constitute “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. Words such as “will,” “expect,” “anticipate,” “intend,” “may,” “could,” “should,” “plan,” “project,” “forecast,” “believe,” “estimate,” “outlook,” “trends,” “goals” and similar expressions generally identify these forward-looking statements. Forward-looking statements include, among other things, statements relating to Northrop Grumman’s climate- and sustainability-related strategies, initiatives, commitments, plans, targets and goals. Forward-looking statements are based upon assumptions, expectations, plans and projections that we believe to be reasonable when made, but which may change over time. These statements are not guarantees of future performance and inherently involve a wide range of risks and uncertainties that are difficult to predict. Specific risks that could cause actual results to differ materially from those expressed or implied in these forward-looking statements include, but are not limited to, those identified under “Risk Factors,” other important factors disclosed in our [Annual Report](#) on Form 10-K and, from time to time, in our other filings with the SEC. These risks and uncertainties are amplified by the global COVID-19 pandemic, which has caused and will continue to cause significant challenges, instability and uncertainty. We urge you to consider the limitations on, and risks associated with, forward-looking statements and not unduly rely on the accuracy of forward-looking statements. These forward-looking statements speak only as of the date of this report. We undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by applicable law.

The information in this report is based in part on information from third-party sources that Northrop Grumman believes to be reliable, but which has not been independently verified by Northrop Grumman. Data, statistics and metrics included in this report are non-audited, non-assured estimates, continue to evolve and may be based on assumptions believed to be reasonable at the time of preparation, but may be subject to revision. This report also contains statements based on hypothetical scenarios and assumptions. These statements should not necessarily be considered as being indicative of current or actual risk or forecasts of expected risk.

The inclusion of information contained in this report should not be construed as a characterization regarding the materiality or financial impact of that information.

Governance

Board Oversight

Our Board provides leadership and oversight with respect to ESG practices and our enterprise risk management activities, among other duties. Each of our independent Board committees assists in this role, providing its expertise. The full Board has ultimate responsibility for the oversight of risk, and receives at least annual updates from each of the committees as well as periodic reports from senior management addressing specific risks, including those related to climate.

1. The **Policy Committee** oversees the company's environmental program, including net zero, water and waste plans; oversees climate change-related risks (including, among other things, Scope 1 and 2 GHG emissions and targets for emissions reductions) and reviews our annual sustainability report. The Policy Committee also provides oversight of our ethics, standards of business conduct, corporate responsibility, human rights, and employee health and safety. The Policy Committee receives periodic updates from the Chief Sustainability Officer (CSO) and Vice President, Global Corporate Responsibility.
2. The **Audit and Risk Committee** assists the Board generally in overseeing the company's management of enterprise risks. This includes oversight of the company's financial risks, as well as risks pertaining to natural and environmental matters, cybersecurity, insurance, nuclear and the company's compliance program.
3. The **Compensation Committee** approves the financial and non-financial metrics for our compensation program, among other responsibilities. The non-financial metrics include certain environmental and diversity, equity and inclusion goals.
4. The **Governance Committee** looks broadly at governance-related risks, including the role of each committee with respect to oversight of ESG and corporate culture, among other responsibilities.



Governance

Board Oversight (continued)

The full Board receives reports from its committees and senior management, meets periodically with employees across our business and carefully considers the range of issues that fall within our sustainability program. For example, the full Board and the Policy Committee receive periodic briefings from the CSO on environmental and climate-related issues, and from the General Counsel (or her or his designee) on human rights-related issues, including those related to the environment. The General Counsel and Chief Financial Officer (CFO) also update the Audit and Risk Committee annually on the Enterprise Risk Management Council (ERMC) and the process of identifying significant risks and mitigation strategies, including those related to climate change.

Management's Role

In 2021, as evidence of its continued commitment to sustainability, Northrop Grumman hired its first CSO reporting to the CEO. This individual leads a team focused on a variety of sustainability initiatives such as designing and implementing enterprise-wide business practices for carbon reduction, resource efficiency and material management. The role is designed to help reduce the company's environmental impact and advance sustainability throughout the business. The CSO, together with other members of the Executive Leadership Team, reviews climate-related issues and identifies risks and opportunities of significance.

Management is directly involved in the assessment and oversight of risks related to sustainability, including risks related to climate change and natural disasters that may affect operations, through, among other things, the ERMC. The ERMC is comprised of all members of the Executive Leadership Team, as well as the Chief Accounting Officer, Chief Compliance Officer, CSO, Corporate Secretary, Vice President, Internal Audit and Treasurer. Additional information about the ERMC is described in the [Risk Management](#) section.



Risk Management

Northrop Grumman proactively identifies, assesses and manages risks across all aspects of our business. The ERMC evaluates risks and mitigation strategies across the company, including new, emerging or evolving risks. Other groups within the company, such as business continuity and supply chain management, have specialized practices in place for additional risk identification, assessment and management.

Enterprise Risk Management Council

The ERMC seeks to ensure that the company has identified and understands the more significant risks facing our business and that we have effective mitigation measures in place to address each of them. These risks are described in the company's [Annual Report](#) on Form 10-K. Included within these risks are natural disasters, environmental, health and safety, compliance with laws, hazardous and high-risk operations, and climate-related risks, such as increased wildfire risks, rising mean temperature and sea levels, and long-term changes in precipitation patterns, like increased drought, desertification and/or poor water quality.

The ERMC is chaired by the company's Chair and Chief Executive Officer and includes all senior members of the leadership team and others as noted above. The ERMC meets at least twice a year. At the ERMC meetings, members review each of the significant risks to the business, current trends related to those risks and the status and effectiveness of mitigation measures. For example, the ERMC will review how climate change may continue to impact facilities, operations, employees and communities in certain regions potentially exposed to climate change-related natural disasters. Similarly, the ERMC will evaluate how climate change-related disruptions could impact the availability and cost of materials needed for manufacturing, and how new or more stringent regulations adopted in response to climate change could require substantial capital investment and enhanced reporting. Importantly, the ERMC also identifies, discusses and considers new potential or emerging risks that could become significant to the company, including emerging climate-related risks, and integrates climate-related risks into the overall risk management process at Northrop Grumman.

Members of the ERMC discuss the status of each risk, whether the risk is increasing or decreasing and areas of concern. The company has developed risk mitigation efforts for each of our significant risks, which members of the ERMC oversee. The ERMC members work with management on risk mitigation and provide periodic updates to the Board.



Risk Management

Business Continuity

The Business Continuity Program (BCP) conducts annual physical security surveys to evaluate risks and opportunities and their potential impacts to the company, personnel and/or operations. Business impact analyses are performed annually, originating at the site level and rolling up to the sector level, and the impact is determined on a scale of low, medium or high.

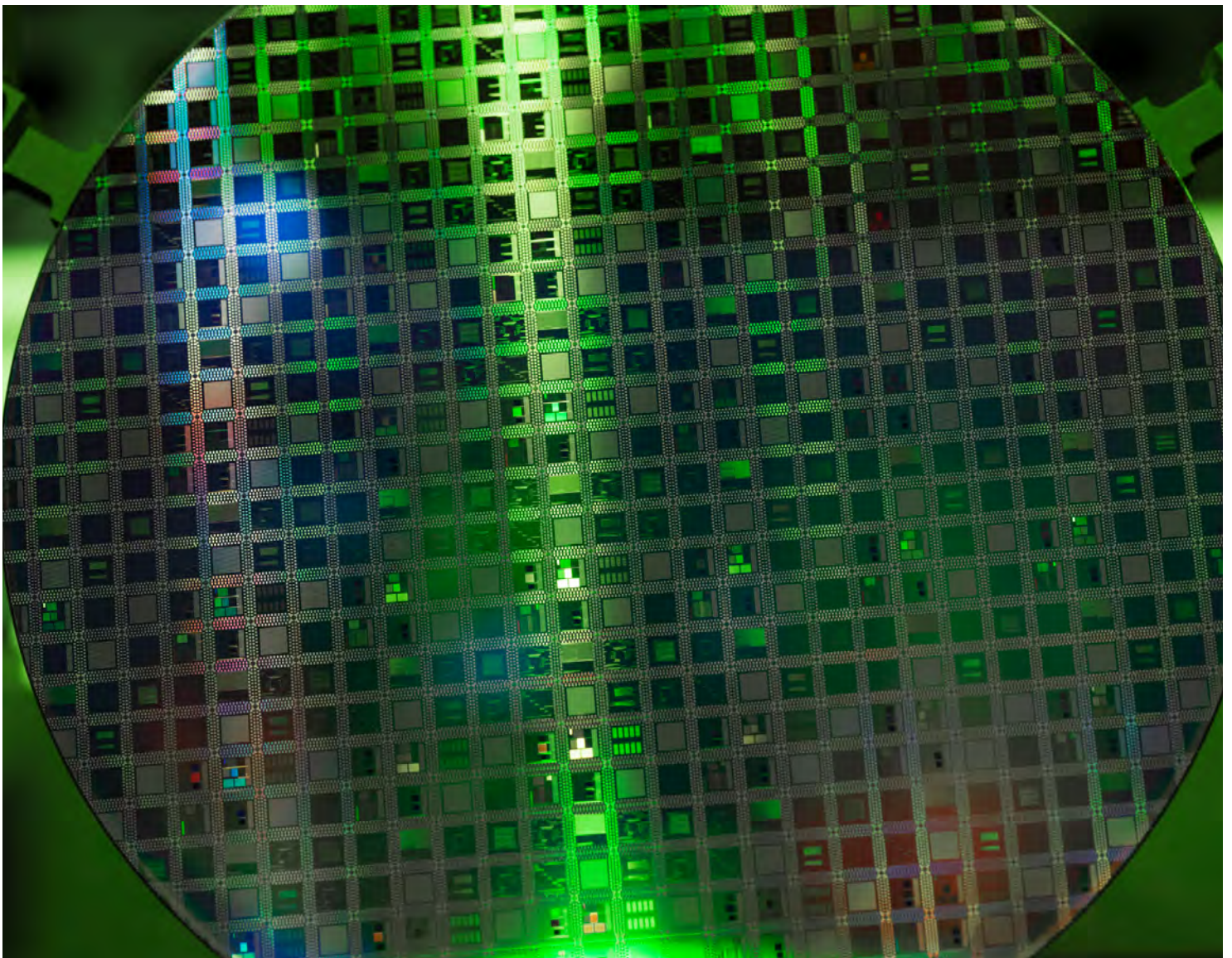
Our Business Continuity team operates through centralized control and has oversight over all business units and service lines. The BCP performs business impact analyses in coordination with the sectors to assess the potential risk and identify the recovery prioritization of sites and business processes, as well as gaps in recoverability, at least annually. The analysis assesses the effect on the company by determining the financial, reputational and known legal impact if recovery is not achieved. Using a tiered ranking system, we evaluate risks to help determine prioritization based on probability, business impact (including a focus on top-tier suppliers), recovery time and if the exposure will be addressed at the site, sector or company level. When possible, we establish contingency plans in case our personnel or buildings are unavailable due to risks, such as natural disasters exacerbated by the effects of climate change. Certain risks and issues are elevated to sector and company leadership where mitigation options are developed and funded.



Risk Management

Supply Chain Risk Management

The global supply chain risk management team has a formal process for identifying, assessing and managing risks that have the potential to disrupt our supply chain. Risks are assessed broadly across 20 characteristics categorized as financial, operational or business. The team uses a data-driven approach to evaluate both the likelihood and impact of a supply chain disruption. Each risk is regularly monitored to determine changes in assessment levels. Risk assessments that exceed predefined prioritization levels trigger the development and execution of enterprise-level risk mitigation strategies. We review the results of these strategies on a monthly basis to ensure their effectiveness. This enterprise-wide approach requires collaboration across our sectors and incorporates insights from a diverse set of stakeholders and data from many different sources to ensure that risks are identified and managed at the appropriate level.





Climate-Related Risks and Opportunities and Their Impact on Organization

Northrop Grumman recognizes that climate-related risks and opportunities have the potential to impact our business in the short, medium and long term. For the purpose of our climate-related risk and opportunity assessment, we define “short term” as zero to five years, “medium term” as five to 15 years and “long term” as greater than 15 years. We selected these time horizons as these climate-related risks can manifest themselves across our risk categories at different points in time. The tables below specify various climate-related risks and opportunities that Northrop Grumman may face throughout these time periods and summarize our management team’s approach to addressing them. We use the word “material” throughout this report, as is consistent with Global Reporting Initiative terminology, which states that material issues include those that “reflect the organization’s significant economic, environmental and social impacts; or substantively influence the assessments and decisions of stake-holders.” We do not use the term as defined by, or in the context of, the U.S. Securities and Exchange Commission (SEC) laws, including those related to SEC reporting and disclosure obligations (or any other securities laws) or as the term is used in the context of financial statements and financial reporting.

OPPORTUNITIES

TIME HORIZON: SHORT	OPPORTUNITY AREA: RESOURCE EFFICIENCY
Impact on Business	Resource efficiency creates an opportunity for reduced operating costs at a company’s sites.
Examples	<p>Building Efficiency Driven by Northrop Grumman’s Environmental Sustainability Program and climate goals, we annually invest in our infrastructure through energy efficiency and GHG emission reduction projects, reducing the cost of our operations and minimizing our environmental footprint worldwide.</p> <p>We have 16 “green” buildings in our portfolio, totaling more than 2.2 million square feet of floor space certified to Energy Star and LEED standards. Investments in projects such as these drove performance toward our previous GHG emission reduction goal and reduced operating costs.</p> <p>Transportation Efficiency Northrop Grumman has been a registered U.S. Environmental Protection Agency (EPA) SmartWay Transport Partner since 2008, enabling us to increase our visibility into our freight transportation activities and optimize our transportation modes. SmartWay Carrier Partners account for more than 99% of our freight transportation requirements. Additionally, we have transitioned a significant portion of international shipments from air to surface. These initiatives have increased shipment efficiency, decreased fuel use and reduced Scope 3 GHG emissions. We have also started to shift our fleet from gas to electric vehicles (EVs) where possible, and have grown our EV workplace charging program significantly. This incentivizes employees to have electric cars, therefore lowering our Scope 3 emissions and improving employee satisfaction.</p>



Strategy

TIME HORIZON: SHORT

OPPORTUNITY AREA: RESOURCE EFFICIENCY

Examples (continued)

Transportation Efficiency (continued)

Our EV Workplace Charging Program has become an increasingly important service that we provide for employees, especially as we continue to see demand for EVs rise. In 2021, 529 new drivers enrolled in this program, which is a 32% increase in enrollment since 2020. Three additional sites began providing EV charging for employees in 2021, adding a total of 64 new charging connections across the enterprise to accommodate employee demand for this service. In 2022, we are installing two “level 3” charging stations at one of our sites, providing an opportunity for expansion to other sites. We will continue to expand these programs and plan to be equipped exclusively with EV vehicles for our company fleet by 2034.

Reduced Water Usage

Each year, we invest in our infrastructure by implementing water use reduction projects, which decreases the cost of our operations and shrinks our environmental footprint across all of our global operations. For example, the 28 projects completed in 2021 are estimated to conserve 41 million gallons annually.

In 2021, we converted a complete chiller system with 14 hydraulic units into a single pass cooling system at our site in Radford, Virginia, conserving 18 million gallons of water and saving \$140,000 in operational costs annually.

Additionally, our Advanced Technology Laboratories (ATL) site near Baltimore, Maryland completed the implementation of a wastewater recycling solution that significantly reduced water consumption. At ATL, researchers develop some of the most technologically-advanced micro-electronics in the world, a process that is not only water intensive, but also requires ultra-pure, deionized water.

The project team designed a sophisticated and highly-focused water filtration system to ensure wastewater could meet the quality standards. After two years of reviewing technology, facilitating bench-scale testing designs and piloting the solution, the system was commissioned and brought online in April 2020.

The ATL project received the Industrial Environmental Association’s 2020 Environmental Excellence Award. With the system fully operational, ATL has a roughly 50% water reuse rate, meaning half of each gallon used is treated and put back into the water system. This system will save approximately 33 million gallons of potable water annually.

These projects helped us achieve our water conservation goals and reduced operational costs. We will continue to identify and implement similar projects to leverage this opportunity.



Strategy

TIME HORIZON: SHORT	OPPORTUNITY AREA: ENERGY SOURCE AND RESILIENCE
Impact on Business	<p>New and renewable energy sources create significant opportunities for a company to reduce operational costs, increase cost competitiveness, reduce exposure to fossil-fuels and transition toward lower-emissions sources.</p>
Examples	<p>Renewable Energy Sources</p> <p>We completed the installation of our newest solar power-generating system at our Rolling Meadows, Illinois site in 2021. This array is the largest onsite solar energy installation at a Northrop Grumman facility to date and joins the company's other solar power initiatives in Florida, California and Virginia. The new system generates 1.1 megawatts (MW) of alternating current (AC) solar electricity and will reduce an estimated 870 metric tons of carbon dioxide emissions each year – enough to power nearly 100 homes for a year. We continue to work on identifying renewable energy opportunities across the enterprise and we are moving forward with four renewable energy projects in 2022.</p> <p>We are proud to add this project to the company's growing renewable energy portfolio, which now includes four fully-installed, company-owned, onsite solar arrays, a virtual power purchase agreement for a landlord-owned system, and a multiyear commitment to purchase Renewable Energy Credits (RECs). In 2021, our onsite renewable energy sources generated 1,298 megawatt-hours (MWh) of electricity and our total renewable energy consumption was 24,301 MWh. We continue to work on new renewable energy opportunities at our sites.</p> <p>Alternative Fuel</p> <p>Although we do not manufacture it, aviation fuel is important to our business and advancements in its formulation offer significant opportunities to reduce emissions. We are committed to exploring the use of sustainable aviation fuel alternatives in our products as they become available and welcome the ability to participate in additional emission reduction programs.</p> <p>Energy Conservation</p> <p>Energy conservation is a central tenet to reducing our GHG emissions and we are committed to driving energy conservation throughout our operations. Internally, our Energy Management Committee brings together site representatives from across the company to share best practices and learn about new technologies that could drive further efficiencies. Externally, our partnership with the U.S. EPA ENERGY STAR program has supported the implementation of efficiency measures at our sites and reinforces our commitment to energy conservation.</p>



Strategy

TIME HORIZON: SHORT TO MEDIUM	OPPORTUNITY AREA: PRODUCTS/SERVICES AND MARKET
Impact on Business	<p>Climate-related issues may increase demand for lower-emissions technologies and for capabilities that support environmental and weather research. A shift in investor attitudes towards industries with lower-perceived impact on climate change and that are able to demonstrate climate transition preparedness has the potential to positively impact a company.</p>
Examples	<p>Substitution of Existing Products and Services with Lower Emissions Options The U.S. government's use of buying power to reward climate innovation in new products or services from competitors could result in opportunities for Northrop Grumman to continue to develop new products and technology with lower emissions, climate resiliency or technological advances that assist with the transition to a low-carbon economy.</p> <p>Climate Adaptation Solutions Changing conditions impacting the frequency of extreme weather, the movement of glaciers and soil moisture conditions require increased monitoring and measurement. From observations to decision support, Northrop Grumman develops and operates systems and services to deliver environmental intelligence through science, sensors and enterprise services. Examples include:</p> <ul style="list-style-type: none"> • The Global Hawk air vehicle that is being used by the National Aeronautics and Space Administration (NASA) earth science missions as sustainment services for the Air Force Weather program; • The ICESat-2 satellite that measures the changing height of Earth's glaciers, ice sheets and sea ice; and • The AstroMesh-Lite® reflector being developed for NASA's Jet Propulsion Laboratory Soil Moisture Active Passive spacecraft. <p>Landsat 9 Landsat 9 is a joint mission formulated, implemented and operated by NASA and the United States Geological Survey. The mission continues the Landsat program's critical role in monitoring, understanding and managing the land resources needed to sustain human life. Landsat data constitutes the longest continuous record of the Earth's surface as seen from space, a unique and valuable resource for applications including agriculture, land use mapping, forestry, carbon cycling and sequestration and water resource management. Landsat is the only U.S. satellite system designed and operated to repeatedly observe the global land surface at a moderate scale and show both natural and human-induced change.</p>



Strategy

TIME HORIZON: SHORT TO MEDIUM

OPPORTUNITY AREA: PRODUCTS/SERVICES AND MARKET

Examples (continued)

Research and Development Innovation

Northrop Grumman has provided a significant investment in a partnership with the California Institute of Technology (Caltech) for the development of the Space Solar Power Initiative. This program brings together our top engineers with researchers from Caltech to develop scientific and technological innovations to enable a space-based solar power system capable of generating electric power at cost parity with grid-connected fossil fuel power plants. In 2015, Northrop Grumman provided \$17.5 million to support this project and continues to collaborate with the Caltech team to develop solutions, build prototypes and obtain experimental and numerical validation concepts that could allow for the development and eventual implementation of new deep space solar technology.

TRANSITION RISKS

TIME HORIZON: MEDIUM

RISK TYPE: POLICY AND LEGAL

Description

Companies across the board may face new climate change-related policy and legal requirements, such as carbon taxes or cap-and-trade programs in the states and/or countries in which they primarily operate.

Impact on Business

Carbon Tax

The financial impact of a carbon tax could be significant, based on Northrop Grumman's historical Scope 1 and 2 emission levels and the International Energy Agency's (IEA's) estimated carbon price of \$140/tCO₂ by 2040. A deeper analysis of carbon taxes can be found in the [Resilience of Strategy](#) section.

Requirements for and Regulation of Existing Products and Services

Although existing products and services are less likely to be impacted by climate-related requirements, such as emission limits, our facilities and operations may be indirectly exposed to such requirements. Increased regulatory requirements have the potential to result in additional costs based on GHG emissions. This may result in a meaningful impact to Northrop Grumman's business.



Strategy

TIME HORIZON: MEDIUM	RISK TYPE: POLICY AND LEGAL
Management Approach	<p>Emissions Reductions Goals</p> <p>Our second GHG emissions reduction goal, which was met in 2020, was to reduce emissions by 30% from 2010 to 2020. The results of this program were very positive as we exceeded our 2020 goal with a 43.7% reduction in emissions during the target period and further reduced them in 2021. By proactively and voluntarily reducing our emissions, we are minimizing exposure to future carbon taxes from the federal government, states and/or countries where we do business, while also making a meaningful contribution to the fight against climate change. Please see the Climate-Related Targets section of this report for more on our updated emissions reduction and net zero goals.</p> <p>Environmental Health and Safety (EHS)</p> <p>The EHS team heads the company's efforts to conduct our operations in an environmentally-responsible manner and in accordance with applicable legal requirements and best practices, including with respect to GHG emissions.</p> <p>Regulation and Regulation Tracking</p> <p>Management functions – such as the Law Department, Business Management, Internal Audit or Global Supply Chain – proactively track emerging requirements to allow us to assess and implement changes to our business operations and minimize climate-related costs associated with new governmental programs.</p>
TIME HORIZON: LONG	RISK TYPE: TECHNOLOGY
Description	<p>Technological improvements that support the transition to a low-carbon economy have the potential to have a meaningful impact on companies generally. For example, companies with lower-emission products or services may have a competitive advantage over those whose products create higher GHG emissions. Further, costs to reduce emissions, purchase renewable energy or implement carbon capture technologies at facilities could be significant.</p>



Strategy

TIME HORIZON: LONG	RISK TYPE: TECHNOLOGY
Impact on Business	<p>Substitution of Existing Products and Services with Lower Emissions Options Changes in our customers' requirements, priorities and ways of doing business have an impact on our business, operations and financial success. These changes create opportunities and risks. If, for example, our customers develop requirements and adopt procurement policies that encourage social and environmental objectives, including products and technology with lower emissions, climate resiliency or technological advances that assist with the transition to a low-carbon economy, and we are unable to meet those evolving demands, our competitiveness may be impacted. However, we may have opportunities to be more successful in selling our products, winning new business and growing our revenues if we are able to meet customer expectations around social and environmental objectives.</p> <p>Costs to Transition to Lower Emissions Technology Considering the pace of sustainability-focused technological advancements across the globe and the emissions and/or climate impacts associated with the defense industrial base, both for Northrop Grumman and our suppliers, it is reasonably likely that the industry will experience changes in technology over the next 20 to 30 years. As we expect many of these costs will be considered allowable and allocable costs to our U.S. government contracts, there is potential for the costs to impact overall affordability in the short term and that some of these costs could be managed through efficiencies gained in the future.</p>
Management Approach	<p>Product Development Our products and services are designed to meet contractual requirements of our customers, primarily the U.S. government. Company-sponsored research and development investment strategy includes significant investment to support future technologies and mission solutions primarily related to government programs. One example of a low-carbon future technology is the development of a space-based solar power system. Please see the Opportunities section of the report to learn more.</p>
TIME HORIZON: SHORT TO LONG	RISK TYPE: MARKET AND REPUTATION
Description	<p>Investors, advisory services, government regulators, lenders and other market participants have focused increasingly on the environmental or "sustainability" practices of companies. There is the potential for increased market and reputational risk tied to changing customer and stakeholder expectations and standards, which continue to evolve, related to an organization's ESG practices, disclosures and performance, including expectations around transitioning to a low-carbon economy. For example, the perception that a company is not a responsible environmental steward or any failure to effectively respond to new or evolving legal and regulatory requirements or other sustainability concerns, could adversely affect a company's business, reputation or financial position. This also could create opportunities, as noted above.</p>



Strategy

**TIME HORIZON:
SHORT TO LONG**
**RISK TYPE:
MARKET AND REPUTATION**
Impact on Business
Changing Customer Behavior

Many of the markets in which we operate are characterized by rapidly-changing technologies and are highly competitive. If customer acquisition strategies, including those of the U.S. government, are modified to include climate change-related requirements, and we meet those evolving demands, we may see competitive advantages and enhanced future successes. If, conversely, current or future competitors outperform us in response to such demands or on our current and planned transition efforts to innovative climate-related products or services, we could lose future business to our competitors, which could affect our ability to generate favorable financial results and maintain market share and affect our financial position, results of operations and/or cash flows.

Increased Cost of Raw Materials

The long-term nature of Northrop Grumman's contracts would mean that an unanticipated, significant and extended period of rising raw material and component prices (either because of inherent value appreciation or supplier logistics pass-through costs) would impact profitability until contract expirations allow for repricing or other suppliers can be identified to avoid becoming less affordable on future contracts. Raw materials can also include the cost of electricity, natural gas and jet fuel. As the world transitions away from fossil fuels in an attempt to lessen GHG emissions, there could be considerable additional costs placed on gas and oil for a variety of uses, including electricity, freight and transportation. Northrop Grumman relies on electricity and fuel usage in the manufacturing of our products, and sudden or significant increases in prices outside of cost escalation assumptions could impact the profitability of our fixed-price U.S. government contracts, as well as the affordability of our cost-type contracts.

Increased Stakeholder Interest

Shareholders, financial institutions and others have increasingly looked to a company's ESG practices, disclosures and performance before making investment or other financial decisions. Regulators have been increasing requirements and enforcement activities. We believe our practices, disclosures and performance are strong and growing. However, if they do not continue to meet investor, lender, regulator or other stakeholder expectations and standards, which continue to evolve, our access to capital may be negatively impacted, including in both the equity and debt markets, and we may be adversely affected.



Strategy

TIME HORIZON: SHORT TO LONG

RISK TYPE: MARKET AND REPUTATION

Management Approach

Commitment to Climate Adaptation

Northrop Grumman is committed to the proactive management of our environmental impacts and risks. We show this commitment by setting climate-related targets, promoting strong leadership in environmental sustainability and climate change and responding to voluntary disclosure frameworks, such as TCFD. We believe this continued commitment gives us a competitive advantage in the marketplace.

Long-Term Contracts

When practicable, Northrop Grumman negotiates long-term price agreements with suppliers to protect against the risk of price escalations over time. This strategy has also been used to mitigate risks attributed to inflation and to capitalize on the availability of supplier capacity during market disruptions.

PHYSICAL RISKS

RISK TYPE: ACUTE

TIME HORIZON: SHORT

Description

Acute physical risks refer to those that are event-driven, including the increased severity of extreme weather events such as hurricanes, wildfires or floods. These events can have direct (physical damage) and indirect (business and supply chain disruption) impacts on a company's operations. As a result of the increased risk and expected recovery cost after catastrophic climate events, there is a risk of insurance coverage becoming less available or a larger financial burden.

Impact on Business

Increased Severity of Extreme Weather Events

The increase in frequency and/or severity of extreme weather events may have a significant impact on many parts of our business, including: manufacturing, corporate locations (including facilities that have been and may in the future be exposed to extreme weather events), distribution facilities, logistics and transportation, supply chain and even demand for product, as stated within the Risk Factors section of our [Annual Report](#). We have significant operations, including centers of excellence, located in regions that have been and may in the future be exposed to hurricanes and other damaging storms, changing water levels, wildfires and other natural disasters. Our subcontractors and suppliers similarly are subject to natural disasters that could affect their ability to deliver or perform under a contract, including possible disruptions to their workforce or the critical industrial infrastructure needed for normal business operations.



Strategy

RISK TYPE: ACUTE	TIME HORIZON: SHORT
Impact on Business (continued)	<p>Insurance Coverage Loss</p> <p>As property and casualty insurance carriers look to remain profitable in the face of an increased frequency and severity of extreme weather events, certain insurance coverages, like commercial property, may undergo significant price increases and re-underwriting that could result in higher deductibles, lower policy limits and restrictions in coverage provided for certain geographies. If insurance or other risk transfer mechanisms are unavailable or insufficient to recover all costs, or if we experience a significant disruption to our business because of a natural disaster, it could have an adverse effect on our financial position, results of operations and/or cash flows.</p>
Management Approach	<p>Business Continuity Program</p> <p>The BCP is designed to enable the company to respond effectively to unanticipated events like natural disasters with an emphasis on the protection of people, information and assets, as well as continuity of mission. The BCP leverages annual risk assessments to evaluate risks and opportunities and their potential impacts to the company, personnel and/or operations.</p> <p>Our business continuity response in Louisiana is one such example. Northrop Grumman's Aircraft Maintenance and Fabrication Center in Lake Charles was directly impacted by Hurricane Laura in late August 2020. The region was hit by the hurricane which, with high winds, delivered devastating loss of life and property damage to the community. Residents were just recovering from this first hurricane when Hurricane Delta hit in early October 2020, bringing another round of torrential rains across the region. Both hurricanes caused widespread power outages and flooding, which created extensive debris fields.</p> <p>Crisis management teams engaged early, with Northrop Grumman's recovery and response preparation efforts guided by well-documented crisis management and business continuity plans and established protocols. Once all personnel had been accounted for, teams were deployed to assist with employee needs including supplies, insurance coordination, repairs, temporary housing and more, with a focus on timely and targeted outreach and communications. Partial business resumption after Hurricane Delta occurred after only nine days, and full resumption occurred after 20 days, demonstrating improved resiliency. In 2021, Northrop Grumman received Disaster Recovery Institute International's "Award for Excellence" in the category of Response and Recovery of the Year based on our crisis management response to these hurricanes.</p> <p>More information about our BCP can be found in the Risk Management section of this report.</p>



Strategy

RISK TYPE: ACUTE	TIME HORIZON: SHORT
Description	<p>Chronic physical risks refer to longer-term shifts in climate patterns. This may manifest as extreme variability in weather patterns and sea level rise, causing disruptions to a company's global supply chain and impacting operational continuity and the demand for and use of the company's products.</p>
Impact on Business	<p>Changes in Precipitation Patterns and Extreme Variability in Weather Patterns Extreme weather can disrupt all transportation mediums across the supply chain, particularly on coastal ports most impacted by tropical storms and hurricanes. We work with many small suppliers who may not be able to afford climate adaptation efforts. These factors could result in an elevated potential for adverse downstream impacts on our operations because of the disruption of our supply chain.</p> <p>Rising Sea Levels Northrop Grumman has facilities in the coastal states of the continental U.S. that are susceptible to disruption from sea level rise. Furthermore, the global supply chain may be exposed to similar risks as well, stemming from significant damage to coastal ports, which could also affect material flow.</p>
Management Approach	<p>Supply Chain Risk Management Natural disasters exacerbated by climate change are one of many characteristics integrated into our Global Supply Chain Risk Management Strategy. Northrop Grumman has a committee that meets monthly to identify, assess and monitor supply chain risks across the enterprise to manage issues. Our Global Supply Chain Risk Management Strategy is informed by the natural and environmental disaster exposure that our suppliers and subcontractors face, which could affect their performance on our contracts and ultimately impact our operations. When a natural disaster-related supply chain risk has been identified, the committee assesses the probability of supply chain disruption, as well as the severity of impact to our business operations and programs. Detailed mitigation plans are established at the local or enterprise level in collaboration with our internal stakeholders and suppliers, as appropriate. Please see the Risk Management section of this report for more information on our supply chain risk management process.</p> <p>Site Selection Northrop Grumman's ERMC includes chronic physical risks as part of its risk assessment and management programs. We leverage insurance modeling systems to determine the maximum windstorm exposure as well as proximity to coasts when designing new buildings, and use this as a basis for annual insurance coverage. We also review the infrastructure supporting critical sites and assess and rank priority risk level based on function and facility two times a year to determine the best way to support the highest-priority facilities.</p>



Resilience of Strategy

In 2022, Northrop Grumman conducted a climate scenario analysis on certain physical and transition risks to gain a deeper understanding of our resilience in different climate scenarios. The climate scenarios chosen are based on standardized third-party scenarios, which are widely used when performing climate scenario analyses in order to enhance comparability of climate resilience across companies. The modeling processes and results of these analyses are discussed below.

Transition Risk

For our 2022 transition risk assessment, we focused on the potential for increased pricing of GHG emissions because of the implementation of a carbon price. The analysis contemplates the impact of direct carbon taxes on our Scope 1 emissions, as well as the increased price of electricity (Scope 2), driven by pass-through costs from utility providers as a result of direct carbon pricing on their emissions.

Scenario Selection

To understand the potential impacts of carbon pricing, we chose two scenarios for our analysis based upon the IEA Stated Policies Scenario (STEPS, 2.6°C) and Sustainable Development Scenario (SDS, 1.5-to-2°C), across a time horizon spanning from a base year of 2021 to 2050. For the purpose of modeling the impact of carbon pricing, STEPS considers only currently-enacted carbon policy (which aligns with a 2.6°C increase in temperature by 2100 relative to pre-industrial levels), whereas SDS represents IEA's view on the policy necessary for an orderly transition to a low-carbon economy in support of global temperature increases well below 2°C.

STEPS is based on policies in place as of mid-2021. It includes long-term energy and climate targets only to the extent that they are backed up by specific governmental or regulatory policies. Under STEPS, the share of renewable energy is gradually increasing, and accounts for over 40% of electricity generation by 2040. SDS assumes a near-term surge in clean energy policies and investments to achieve sustainable energy objectives in line with the Paris Agreement, including universal access to modern energy and air quality goals. Renewables are even more prevalent than in STEPS, with all advanced economies reaching net zero emissions by 2050.¹ Although some assumptions made by the IEA may seem aggressive relative to current trends, they are modeled as presented for standardization purposes and best practices to allow us to understand the impact to our business under a 1.5-to-2°C warming scenario. We believe these two scenarios provide a useful comparison between existing policy (STEPS) and what would be necessary to avoid the worst physical impacts of climate change (SDS).

Methodology Overview

Using information from scientific studies performed by the IEA and other available energy and policy projections, we determined and modeled the characteristics associated with IEA's STEPS and SDS climate change scenarios from present day through 2050. We also considered two potential emissions paths to quantify the potential carbon cost associated with each under the defined time horizons and climate scenarios. The first of these represents a scenario that does not reflect consideration of Northrop Grumman's net zero emissions commitment and so includes no expected GHG reductions. Although we do not expect this scenario to occur, we modeled this to reflect the potential risk to our operations in the absence of a net zero commitment. The second scenario reflects the potential impact of achieving our commitment to net zero emissions by 2035.

¹ Assumption taken from the EIA's [2021 World Energy Outlook](#).

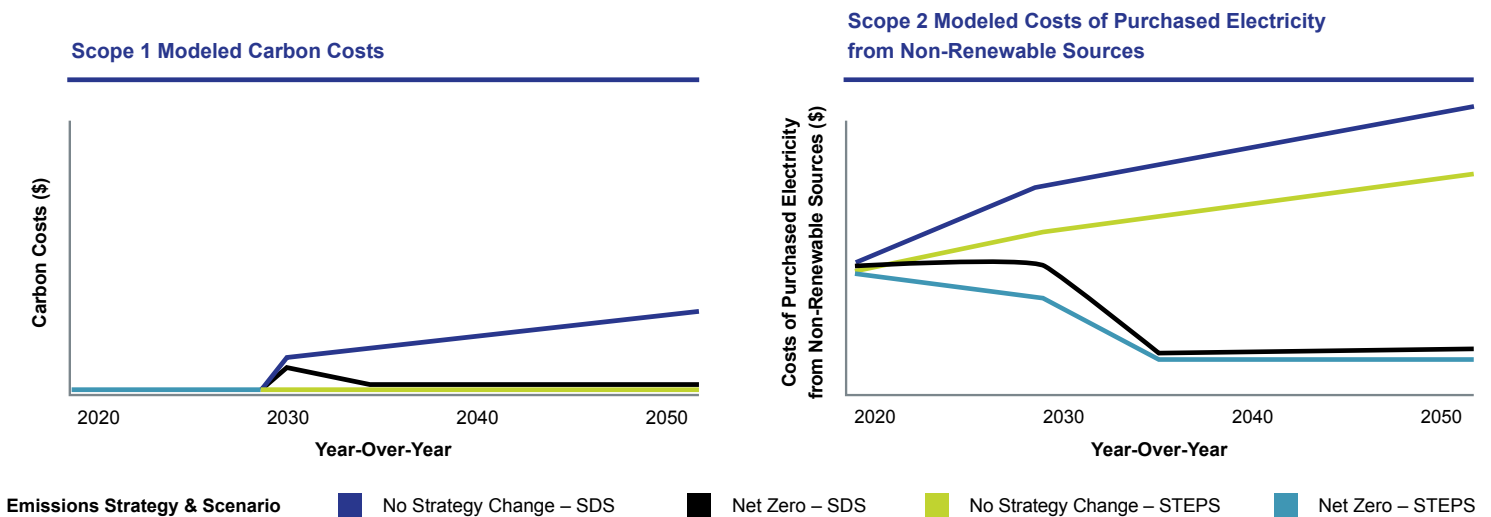
Strategy

Our model applied a simplified approach to emissions reductions. We will continue to refine this analysis in the future. We did not explicitly model, for example, the emergence of the cost of a transition to renewable energy generation sources that may arise in the future.

In addition to different climate scenarios and GHG strategies, we separately projected carbon prices for the operating regions in which Northrop Grumman observes significant GHG emissions (U.S., U.K. and E.U. countries with and without a net zero target, and Australia) under each climate change scenario. We calculated the direct Scope 1 carbon price impact based upon these projections in conjunction with Scope 1 emissions projections by site under both future GHG strategies and relevant time horizons. Indirect Scope 2 carbon price impacts were modeled through the increase in electricity costs to our business (assumed to be passed through from electric utilities). We separately projected electricity prices for the operational regions listed above under each climate change scenario. The indirect Scope 2 carbon price impact was calculated based on these projections, in conjunction with energy consumption projections by site, under both future GHG strategies.

Results

The potential carbon price impact to Northrop Grumman varies considerably across climate change scenarios, as the lower warming scenario (SDS) requires a more stringent policy implementation. In this scenario, the impacts to operating expenses are projected to be substantially higher than the STEPS scenario by 2050 on both Scope 1 and 2 emissions. The graphs below represent the potential magnitude of the impact of each scenario under each GHG strategy through 2050 for Scope 1 and Scope 2 emissions.



As shown in the graphs, our projections of the potential direct impact of carbon pricing on Scope 1 emissions under STEPS is very low. This is not surprising, as the majority of our operations are in the U.S. where no broad carbon price is currently in effect. Under SDS, the increase in 2030 is driven by the scenario’s assumption of carbon pricing being implemented in the U.S. at that time, which is then assumed to increase year-over-year from 2030 through 2050. In either scenario, the estimated direct impact of carbon pricing on our Scope 1 emissions, as produced by our model, is negligible due to our low Scope 1 emission levels. The primary source of potential cost from the implementation of carbon pricing is from purchased electricity costs (Scope 2 emissions) as utility companies pass the carbon price on their emissions through the cost of electricity. However, our risk of carbon pricing can be decreased by achieving our commitment to net zero GHG emissions in our operations.



Strategy

Furthermore, under both the STEPS and SDS scenarios, the impact of carbon pricing does not appear significant relative to prior year revenue in either emissions strategy. For these reasons, we believe we are currently resilient in a carbon policy environment that is aligned to 1.5-to-2°C. We will continue to revisit this analysis in the future as carbon policy in our significant operating areas evolves. Additionally, we will continue to enhance our scenario analysis to contemplate additional forms of transition risks and to generate and share a more complete picture of our transition risk exposure.

Physical Risk

As a leading global A&D company, we rely on the continued operations of our facilities and the safety of our employees. Our physical risk assessment focuses on the potential changes to the risk of flood, tornados, tropical cyclones and wildfires at all of our site locations, including manufacturing facilities, offices and warehouses.

Scenario Selection

Similar to our scenario analysis selections in transition risk modeling, we use established third-party scenarios from the Intergovernmental Panel on Climate Change (IPCC) to model our potential risk exposure. Representative Concentration Pathways (RCP) 2.6 and RCP 8.5 are two generally-accepted scenarios used for the purposes of discussing physical risk scenario testing, and we believe that they provide a useful contrast of best- and worst-case physical risk exposure. RCP 2.6 is characterized by substantial net negative GHG emissions by the year 2100. It assumes carbon transition policies are put in place and is largely aligned with the well-below 2°C warming scenario described in the Paris Agreement. Alternatively, RCP 8.5 is characterized by very high emissions throughout the 21st century. Though considered relatively unlikely, this scenario would result in approximately 4.3°C of warming² as minimal additional effort is made to constrain GHG emissions. This is generally considered a “worst-case” climate change scenario.

Methodology Overview

Our physical risk assessment starts with assigning objective, peril-based risk scores to each of Northrop Grumman’s site locations. These scores align with risk levels ranging from Very Low to Extreme. A baseline (present day) score is given to each location for each peril type we analyzed, and this score is then projected into future time horizons. Projections are calculated by analyzing historically-observed weather data, current risk scores and weather projections under various climate change scenarios. The table on the next page details present day and projection scoring methodology for each modeled peril.

² Assumption taken from the IPCC, 2014: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.



Strategy

PERIL	CURRENT (HISTORICAL) SCORING METHODOLOGY	PROJECTION SCORING METHODOLOGY
Flood	<p>Severity: flood depth (feet)</p> <p>Frequency: flood return period (years)</p>	Projections calculated based on adjusted return period variables
Tornado	<p>Severity: average wind speed translates to severity category</p> <p>Frequency: average number of occurrences of the corresponding severity category in 40 years, within 25 miles of the location</p>	<p>Projection based on the weighted average of the % changes of two variables:</p> <ol style="list-style-type: none"> 1. Maximum one-day precipitation level 2. Maximum wind speed
Tropical Cyclone	<p>Severity: average wind speed translates to severity category</p> <p>Frequency: average number of occurrences of the corresponding severity category in 40 years, within 100 miles of the location</p>	<p>Projection based on the weighted average of the % changes of three variables:</p> <ol style="list-style-type: none"> 1. Maximum one-day precipitation level 2. Maximum wind speed 3. Average temperature
Wildfire	<p>Severity: area burned (acres)</p> <p>Frequency: average number of times where the corresponding number of acres burned in 35 years, within 10 miles of the location</p>	<p>Projection based on the weighted average of the % changes of three variables:</p> <ol style="list-style-type: none"> 1. Consecutive dry days 2. Average temperature 3. Average wind speed

Upon modeling the baseline and projected risk scores, we analyzed the results at site and regional levels to determine potential climate risk exposure and identified the locations and perils contributing the most risk which continue to inform future mitigation strategies to protect us from these risks in the future.

Results

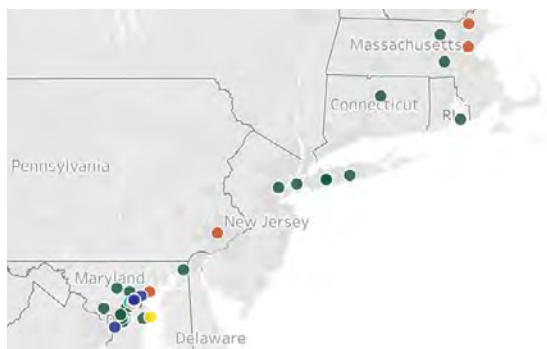
Overall, Northrop Grumman's business is diversified geographically in both high and low warming scenarios, and no single peril presents a heavily-concentrated risk across all locations. As expected, physical risk is estimated to be more impactful under RCP 8.5 conditions because of higher global GHG emissions. However, we still observe changes to physical risk levels under RCP 2.6 conditions. We split our analysis by peril, highlighting the regions that face the biggest risk or experience the biggest increase in projected risk in each area.

Strategy

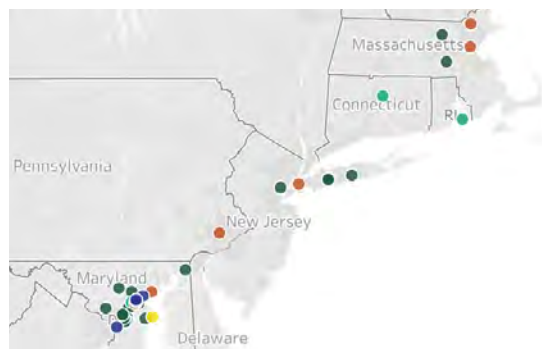
Flood

Flood is the most spatially uniform peril, with a majority of regions exhibiting moderate risk and showing little-to-no change in risk levels in future climate scenarios. Select locations along the east coast show increased flood risk levels, whereas in contrast, future scenarios suggest decreased risk in some arid western regions. However, on average, decreases in flood risk for the western region outpace the modest increases in flood risk in the northeast in 2050 under RCP 8.5.

Baseline Flood Risk (Northeast)



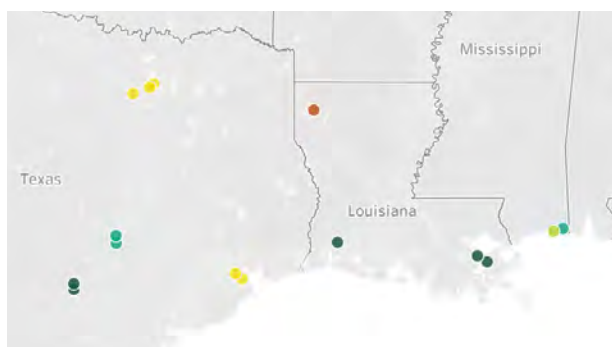
RCP 8.5 in 2050 Flood Risk (Northeast)



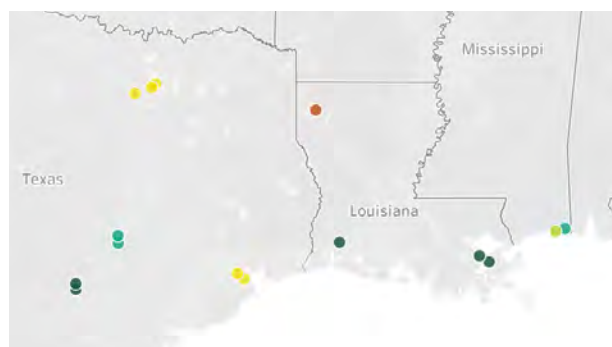
Tornadoes

Tornadoes exhibit the greatest risk in the center of the U.S., with very little change tied to either warming scenario in any region. On average, changes in risk score in either direction under future climate scenarios are small, suggesting that tornado risk is likely to be similar to present day in the future.

Baseline Tornado Risk (South)



RCP 8.5 in 2050 Tornado Risk (South)

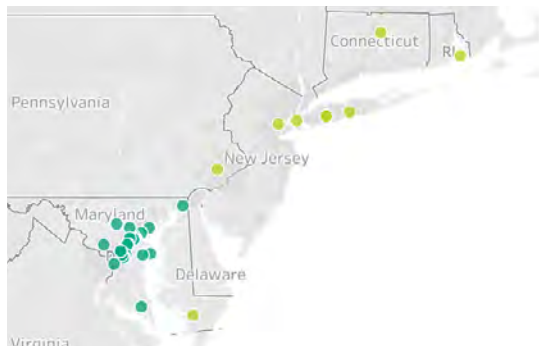


Strategy

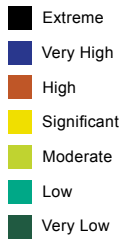
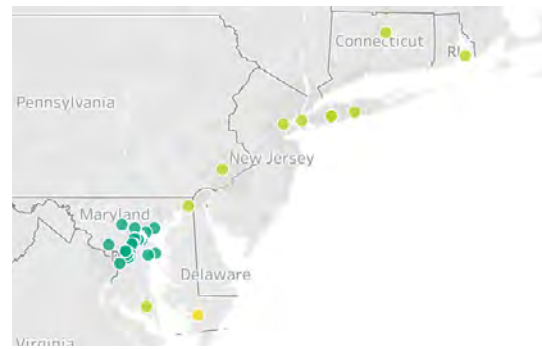
Tropical Cyclones

Our physical risk modeling under both scenarios suggests that tropical cyclones represent the greatest risk in the south and southeast regions of the U.S., with the largest individual risks occurring in Florida. However, the largest risk increase occurs in the northeast, associated with the expected northward shift in land-falling hurricanes as the climate warms. Although the northeast reflects the largest overall increase in tropical cyclone exposure, the increases in risk scores are modest across the climate scenarios and time horizons modeled.

Baseline Tropical Cyclone Risk (Northeast)



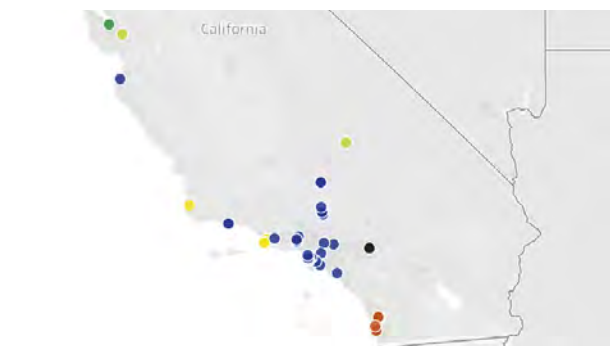
RCP 8.5 in 2050 Tropical Cyclone Risk (Northeast)



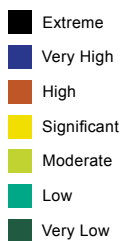
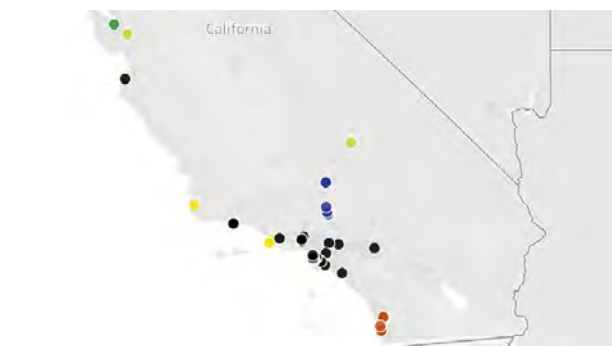
Wildfires

Wildfires are projected to be the greatest risk in many regions, particularly in the west. A number of sites in Southern California are classified as Very High under current conditions and Extreme in both future warming scenarios. This can be attributed primarily to projected decreased precipitation in the region. In addition, the northern Rockies and Plains and the Ohio Valley will also observe potential significant increases in wildfire risk level, higher even than the western region sites on a percentage change in risk score basis. However, the western region shows a larger absolute increase, given the higher level of risk in the baseline scenario.

Baseline Wildfire Risk (West)



RCP 8.5 in 2050 Wildfire Risk (West)





Strategy

Our business is geographically diversified across the U.S., with no single peril heavily concentrated across all locations. The majority of our locations both now and in the future are classified as Very Low risk levels. Risk levels generally increase in future time periods under both climate scenarios we modeled; however, changes are generally small, and our diversification across the U.S. is a positive contributing factor toward resiliency. We also separately analyzed sites we deem to be critical to our operations, and found that – for sites where current risk levels are High, Very High or Extreme – the changes in projected future risk did not substantially increase under either climate scenario. Because of the already-elevated risk levels at these critical sites, mitigation strategies, such as our business continuity programs and physical hardening efforts, are already in place and continually reassessed. For these reasons, we believe that we are well positioned to respond to physical climate change risks. As with transition risk, we will continue to update our physical risk scenario analysis as appropriate, and continue our efforts to maximize resiliency and our response to natural disasters as they occur.





Metrics and Targets

Climate-Related Metrics

Northrop Grumman recognizes the importance of tracking climate-related metrics year-over-year to understand our progress and areas needing improvement. Below are relevant environmental metrics tied to climate-related risks and opportunities over a three-year period. Note: GHG emissions are shown in the [Scope 1, 2 and 3 Emissions](#) section of this report, and as described further below, the emissions metrics are the only metrics reviewed by an external agency.

A comprehensive list of ESG metrics can be found within our [ESG Performance Data Matrix](#).

TOPIC	2019	2020	2021
CLIMATE-RELATED OPPORTUNITIES			
Sites with ISO 14001 certification	26	23	22
Reuse (tons)	101	966	261
Recycling (tons)	19,078	20,975	19,377
Composting (tons)	652	1,365	880
Onsite renewable electricity generation (MWh)	1,240	1,227	1,289
Carbon offsets (tonnes CO ₂ e)	11,000	11,000	0
Reduction of GHG emissions (from 2019 base year) (%)	N/A	-8.2	-3.4
CLIMATE-RELATED RISKS			
Significant fines and penalties (shown in year paid) (\$)	30,500	0	0
Toxic release inventory (tons)	284	421	N/A
Hazardous waste generation (tons)	4,011	2,836	3,475
Hazardous waste generation (number of reportable spills)	0	0	0
Water withdrawal (potable) – total (gallons)	1,405,432,942	1,320,987,911	1,422,103,584
ENERGY			
Energy consumption (GJ)	10,193,988	9,718,161	10,245,254
Renewable energy consumption (GJ)	79,548	79,501	87,482
Electricity consumption (MWh)	1,485,704	1,502,611	1,503,053
Renewable electricity consumption (MWh)	22,097	22,084	24,301



Metrics and Targets

To enhance accountability for ESG performance, our corporate non-financial performance metrics influence the annual incentive compensation for Northrop Grumman's senior leaders. As noted in our [Proxy Statement](#), under our Annual Incentive Plan, we use a mix of financial and non-financial metrics to measure our performance for the purpose of determining award payout to our named executive officers (including the CEO, CFO and others) annually. Environmental sustainability is one of seven non-financial metrics that are measured – in terms of reductions – in absolute GHG emissions, potable water use consumption and improvement in solid waste diversion. Compensation is ultimately determined by our Board, through the Compensation Committee, as discussed in the [Governance](#) section.

Scope 1, 2 and 3 Emissions

Scope 1, 2 and 3 emissions for the past three years are presented in the table below. Scope 3 categories that are not relevant or calculated are not shown. All emissions are listed in tonnes CO₂e. Emissions are calculated under the GHG protocol and in accordance with the International Aerospace Environmental Group (IAEG) GHG Reporting Guidance for the Aerospace Industry. All emissions figures are verified by a third party to evaluate the accuracy and reliability of our methods and data and to promote accountability, as shown in our [LRQA Independent Assurance Statement](#).

EMISSIONS TYPE	2019	2020	2021
Direct (Scope 1)	272,950	231,719	259,321
Indirect (Scope 2) (market-based)	489,232	468,931	466,514
INDIRECT (SCOPE 3)			
Fuel- and energy-related activities (Not included in Scope 1 or 2)	25,191*	23,185*	Not yet available
Upstream transportation and distribution	1,108,845*	768,411*	
Waste generated in operations	2,826*	2,125*	
Business travel	165,710*	62,388	101,307
Employee commuting	172,780*	253,358*	Not yet available
Downstream leased assets	1,318*	1,476	

*Does not include data from legacy Orbital ATK



Metrics and Targets

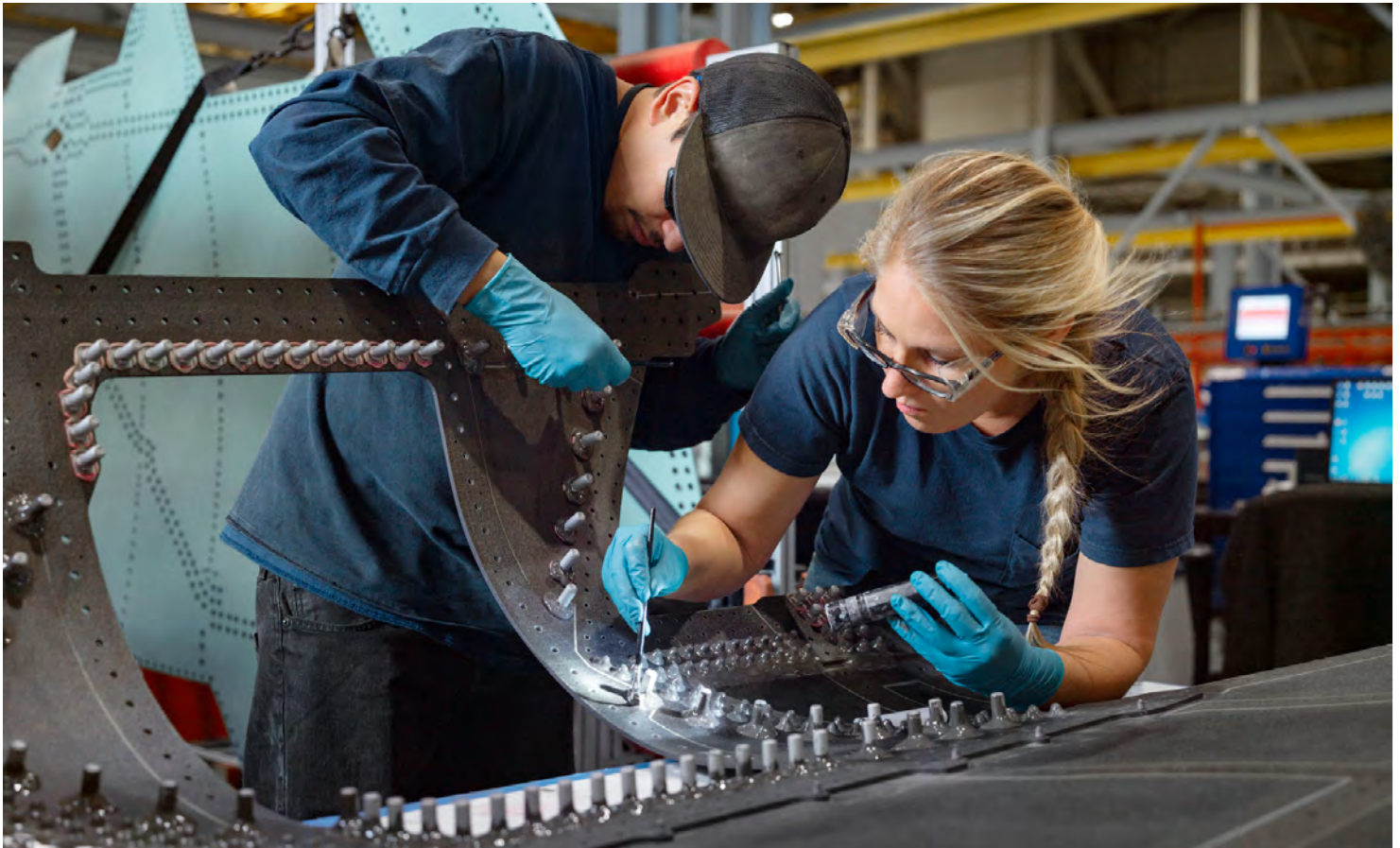
Climate-Related Environmental Sustainability Targets

Northrop Grumman has made significant progress toward an environmentally-sustainable future. In 2020, we marked the end of our second-generation goals, emphasizing GHG emissions, potable water use and solid waste diversion. Since setting these goals, we have worked across the company to achieve substantive, positive change – by reducing our environmental footprint and increasing the long-term efficiency of our operations. We made significant progress on our GHG emission reduction goals, ultimately reducing our emissions by 44% from 2010, which surpassed our reduction target of 30%. We achieved success in this area by coupling strong energy management and efficiency practices with a commitment to implementing impactful emission reduction projects. Our water use decreased by 20% from 2014, achieving our second-generation goal. By completing water assessments at our major manufacturing sites, we gained valuable insight into the water use patterns of our operations. We implemented water conservation projects that estimated saving a total of 312 million gallons of water annually for years to come.

While Northrop Grumman has made significant progress, we remain committed to an environmentally-sustainable future. Decarbonizing our future is a global challenge, and a critical step in mitigating the impacts of climate change on our planet. As a leader in A&D, we support climate science and the need for society as a whole to limit global temperature rise to 1.5°C and drive global GHG emissions to net zero by 2050.



Metrics and Targets



Over the past decade, we have taken meaningful action to reduce the carbon footprint of our operations, and we are prepared to do our part to support this 2050 global vision. As the next step in our journey to decarbonize, we are committed to **achieving net zero GHG emissions in our operations by 2035**. As a part of this commitment, we will continue to emphasize efficiency, invest in low and zero carbon energy solutions and incentivize operations-related emission reductions through the company's non-financial metrics.

We recognize that focusing on GHGs emitted from our operations alone is not all that we can and need to do to support the goal of global net zero emissions, and we are currently in the process of finalizing a sustainability strategy that includes addressing the broader environmental impacts of our operations in the near- and long-term, as well as those of our value chain. We plan to share additional details of our expanded strategy in 2022.

Our commitment to environmental sustainability and climate change is a priority for Northrop Grumman. In addition to achieving our second-generation goals, we link environmental sustainability performance to executive compensation (as described in our [Climate-Related Metrics](#)), commit philanthropic giving to environmental sustainability projects and have a thriving, environmentally-focused employee resource group, greenNG.

Thank you



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