

CARPENTER TECHNOLOGY

# **TASKFORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURE REPORT**

Sustainable solutions for global impact

## GOVERNANCE

### **Describe the board's oversight of climate-related risks and opportunities.**

Carpenter Technology's Board of Directors maintains overall responsibility for Environmental, Social and Governance (ESG) related matters, including climate related risks and opportunities. Our Board and its Committees oversee climate-related aspects of our corporate strategy, plans of action, risk management policies, annual budgets, business plans and the Company's performance objectives. The Board and its Committees work closely with management to ensure that the Company is properly addressing climate-related considerations, including in the Company's overall business strategy. As our Company continues to develop and execute its climate action plan and targets, our Board will continue to oversee our strategy and monitor the Company's progress against goals and targets for addressing ESG-related issues.

The Corporate Governance Committee ("CG Committee") of the Board of Directors reviews and makes appropriate recommendations to the Board regarding the delegation of certain responsibilities to other Committees relating to ESG and climate-related matters. The CG Committee reviews with management significant Company strategies and practices relating to sustainability, corporate responsibility and ESG matters in furtherance of the Company's business strategy, Core Values, and purpose. The CG Committee also reviews recent developments and best practices in the fields of sustainability, corporate responsibility and ESG matters that are identified by the Board, management, or the CG Committee. Further, the CG Committee reviews relevant sustainability, corporate responsibility, and ESG publicly available reports involving the Company. The CG Committee reviews climate related matters at its quarterly meetings and makes recommendations to the Board regarding the foregoing as appropriate.

The Science, Technology, and Sustainability Committee ("ST&S Committee") reviews the actions and progress of sustainability efforts to reduce environmental impact, including reporting of metrics.

The Human Capital Management Committee ("HCM Committee") of the Board of Directors reviews, reports and makes recommendations when appropriate on human capital management, diversity, equity and inclusion, talent management and retention, and corporate social responsibility.

### **Describe management's role in assessing and managing climate-related risks and opportunities.**

Management has implemented an ESG Steering Committee, which includes functional and business leaders, to ensure the Company's sustainability strategy is aligned across the enterprise and to define annual and midterm targets that inform our public reporting. The Steering Committee meets quarterly and reports progress to the Company's Leadership Team. The ESG Steering Committee, which reports to Carpenter Technology's President and Chief Executive Officer, includes the Company's Senior Vice President and General Counsel; the Vice President and Chief Human Resources Officer; the Vice President of Corporate Environmental, Health & Safety, and Security; and the Vice President of Investor Relations and Corporate Development. The ESG Steering Committee monitors and drives execution of the ESG strategy across the Company's various functions and business units.

The Environmental, Health and Safety (EH&S) team oversees our environmental management system with technical experts in all facilities where we operate. The EH&S team develops policies and protocols that establish our global standards for energy management & greenhouse gas emissions, air emissions, waste, water, scrap metal recycling, sustainable sourcing, and training. In addition, the EH&S team is responsible for ensuring we are compliant with applicable legal and regulatory requirements. Our Board of Directors and ESG Steering Committee regularly reviews and approves our environmental activities.

Our EH&S Management System includes mechanisms for regularly evaluating environmental compliance and managing changes in business operations while assessing actual and potential environmental impacts.

## STRATEGY

**Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.**

**Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.**

Through our ESG materiality assessment, Carpenter Technology has identified and evaluated relevant climate-related risks and opportunities with potential meaningful impact on our business. For purposes of this report, we have defined the short-term as within the next 5 years; medium-term as 5 to 15 years; and long-term as 15+ years. Financial impacts and strategic responses to each risk and opportunity are identified. Per TCFD guidelines, risks are categorized as transition risks or physical risks.

We have identified a set of transition risks associated with the shift to a low-carbon and climate resilient economy, including: carbon pricing relevant to facilities and products; mandates on and regulations of existing products and services; and shifts in consumer preferences. We also recognize that extreme weather events pose a physical risk to our supply chain that could impact our operations.

While we believe that climate change poses risks to our operations, we also see opportunities in the transition to a low-carbon economy: additional growth through new sustainable products and markets and improved operational performance through increased efficiency of our operations. We believe we are well positioned to take advantage of these opportunities.

### Risk Type: Transitional

**Policy and Legal: Carbon pricing relevant to facilities and products**

Description and Financial Impact: We expect climate-related regulatory initiatives and carbon markets to increase and be adopted by more countries or legal jurisdictions. Such regulations could increase our manufacturing costs, as well as those of our suppliers.

Time Horizon: Short to Medium

Strategic Response: Carpenter Technology is uniquely positioned within our industry to manage the financial impact of carbon pricing because our specialty alloys do not generate large CO<sub>2</sub> emissions found in the manufacturing process of carbon steels. Our alloys do not require coking or iron ore operations that use carbon-intensive inputs like coal; in addition, we use low-carbon electric arc and vacuum induction melting furnaces as opposed to blast furnaces in our melting operations. Further, 90% of our electricity is sourced from nuclear, a zero-emission energy source.

We will continue to improve production processes, expand our use of renewable energy and invest in new technologies to increase efficiencies to reduce our CO<sub>2</sub> emissions.

**Policy and Legal: Mandates on and regulation of existing products and services**

**Market: Shifts in consumer preferences**

Description and Financial Impact: Federal, state, or local regulations targeted at energy intensive sectors will likely impact our suppliers and customers, and our ability to produce the products and services that Carpenter Technology currently offers. For example, carbon taxes and other regulatory requirements on specialty metals manufacturing would likely increase the cost of our operations; further, regulations impacting our supply chain could hinder the availability of required manufacturing inputs, increasing costs while reducing capacity. In addition to the impact on our operations, this would likely reduce the demand for our products and services as customers found alternative solutions for their needs.

Time Horizon: Medium to Long

Strategic Response: Carpenter Technology is well positioned to provide sustainable solutions to our customers due to our manufacturing and metallurgical expertise and wide portfolio of products. Our research and development investments, including electrification and additive manufacturing, offer solutions for more sustainable products and services that will be needed in the transition to a low carbon economy. For example, our soft magnetic materials are used in over 75% of all generators and APU's installed on commercial and defense aircrafts today. We anticipate the need for efficient electric motors to grow, with greater adoption of electric vehicles. Our recent investment in a state-of-the-art hot-rolling mill will allow us to develop and support the electric motor industry in the future.

## Risk Type: Physical

### Acute & Chronic: Increased severity of extreme weather events

Description and Financial Impact: Certain extreme weather events can lead to interrupted production, disrupted supply chains and raw material shortages in areas impacted by the weather events. Carpenter Technology may see decreased revenue due to decreased production capacity or availability of necessary materials.

Time Horizon: Short to Medium

Strategic Response: Carpenter Technology ensures minimal disruption in weather related supply chain risk by dual sourcing raw material when possible. We work with our suppliers to develop successful, long-term partnerships which reduces the risk of disruption in our supply chain. When possible or practical, we purchase raw material using hedge agreements. In addition, we leverage the use of our Environmental Management System, which regularly evaluates environmental compliance, manages changes in business operations, and assesses environmental impacts, in order to reduce the risk of disruption.

## Climate-Related Opportunities

### Resource Efficiency: Efficient production and improvement processes

Description and Financial Impact: Carpenter Technology could see improved profitability with reduced operating costs by creating more efficient facilities.

Time Horizon: Short Term

Strategic Response: Carpenter Technology's Operating Model is based on lean manufacturing principles and a continuous-improvement mindset, with the goal of increasing efficiencies and minimizing waste in our manufacturing operations. We have recently engaged an engineering firm with expertise in waste management to evaluate our key manufacturing sites to identify energy and waste reduction projects, track progress and develop best practices for a sustainable future. These ongoing efforts improve our profitability, strengthen our long-term growth profile, and reduce our environmental impact.

### Energy Source: Use of lower emissions sources of energy and new technologies

Description and Financial Impact: Reduced exposure to carbon pricing volatility and reduced exposure to fossil fuel pricing volatility may lead to increased profitability.

Time Horizon: Short to Medium Term

Strategic Response: Carpenter Technology's specialty alloys are melted through vacuum induction melting or electric arc furnaces, which use electricity as their power source and have lower emissions than blast furnaces, which require the use of coke or iron ore. Currently, Carpenter Technology sources approximately 90% of our electricity from nuclear power, a carbon free resource. We continue to look for ways to diversify and expand our energy profile, including solar, wind and hydroelectric power, with the overall goal of minimizing our environmental impact.

### Products and Services: Development & expansion of low emission solutions & development of new products or services

Description and Financial Impact: Carpenter Technology is continuously seeking new and innovative solutions for our customers to help meet their goals. We may see increased revenue with increased demand for sustainable and lower emissions products and services.

Time Horizon: Medium Term

Strategic Response: Carpenter Technology's unique product portfolio enables customers across end-markets to achieve their sustainability goals and decrease their environmental impact. We actively invest in research & development to address customer's sustainability needs in industries critical for the clean energy transition. We are well positioned to support solutions that will lower emissions in the aerospace, energy and transportation industries.

Our product portfolio includes specialized alloys, like Custom 465<sup>®</sup> stainless steel that has up to 50% higher strength versus other commonly used stainless steels enabling the design of lighter weight parts for improved fuel efficiency in airplanes. In addition, Custom 465<sup>®</sup> Stainless can replace alloy steels that require environmentally hazardous coating and plating processes applied to common alloy steels for corrosion protection, such as 4340 or 4330+V, enabling airframe supply chains to forgo such coatings.

Our soft magnetic alloys are helping to advance the electrification of the transportation industry, from cars and trucks to electric vertical takeoff and landing vehicles (eVTOL). Hiperco® 50 alloys, used in power-dense motors, can reduce the size and weight of electric motors and generators by up to 30%, increasing vehicle energy efficiency.

Examples of resource efficiency efforts, energy sourcing, sustainable solutions, and market access can be found at [CarpenterTechnology.com/Sustainability](https://CarpenterTechnology.com/Sustainability).

**Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.**

To help us understand the potential implications of climate change on our organization, we reviewed publicly available peer-reviewed climate change scenarios, including those developed by the International Energy Agency (IEA) and the Intergovernmental Panel on Climate Change (IPCC)<sup>1</sup>. To understand the range of potential impact of these scenarios, we chose to evaluate two:

1. a "well below 2°C or lower" pathway in which society works diligently to reduce emissions through innovation and carbon pricing;
2. a pathway in which society delays climate action, resulting in high emissions and global temperature increases.

Our analysis demonstrates that, without action, the first pathway presents financial risks to Carpenter Technology due to increased costs of CO<sub>2</sub> emissions and potential impacts on our supply chain. Efforts to address carbon emissions will present near-term costs but will build value in the long run through increased efficiencies. Despite the financial risk in this scenario, there will be little to no impact on our business model. Given the increased need for our material solutions to solve sustainability challenges, particularly for aerospace, clean energy, and electric vehicle industries, we expect demand for our products and services to increase. For Carpenter Technology, the low carbon transition is a growth story.

The second pathway presents few near-term, transitional risks to Carpenter Technology. This scenario presents a lower probability of near-term financial risks, since it does not require carbon pricing schemes or the transition to new clean energy technologies. However, this scenario does highlight the increased likelihood of extreme weather and climate events, which will have an impact on our operations and the demand for our products. Carpenter Technology will monitor, evaluate, and mitigate potential environmental risk through our Environmental Management System (EMS) and supply chain management programs.

Scenario analysis will be an ongoing practice for our organization as our understanding of climate risk develops, climate change modeling evolves, and assessment tools become available.

<sup>1</sup> IEA scenarios are updated annually while the IPCC publishes comprehensive scientific assessment reports every six to seven years to consider developments in policies, technologies, costs, and science. All information was sourced from the IEA (2020) World Energy Outlook and the IPCC AR6 Climate Change 2021 Report.

## RISK MANAGEMENT

### **Describe the organization's processes for identifying and assessing climate-related risks**

As part of our ESG Program, we identify, assess and monitor climate risks on a regular basis to minimize their potential impact. Like most organizations in our industry, we are subject to domestic and international environmental laws and regulations and consider the regulatory landscape a relevant factor when assessing climate related risks and opportunities.

In 2021, Carpenter Technology undertook a materiality assessment to identify the areas within our operations that posed climate-related risks. We captured feedback from both internal and external stakeholders, including shareholders, customers, ratings agencies, and employees. For each issue, the assessment provided the degree of stakeholder concern and potential business impact allowing us to better understand the potential size and scope of climate related risks. This materiality assessment helped inform and develop our ESG program and gave focus to our mitigation efforts.

Our materiality assessment identified the following areas within our operations that posed climate-related risks:

- EH&S Management System
- Energy Management & Greenhouse Gas Emissions
- Air Emissions
- Waste Management
- Water Management
- Sustainable Sourcing

We continue to identify and assess climate-related risks and opportunities through an engineering survey of our operational facilities. The results of these assessments are reviewed internally by our ESG Steering Committee and our Board of Directors and enable management to create operational improvements to support our stated goals and targets.

### **Describe the organization's processes for managing climate-related risks.**

Carpenter Technology's ESG Steering Committee is responsible for assessing climate-related risks and ensuring the Company's sustainability strategy is aligned across the enterprise. The Steering Committee meets quarterly and reports progress to the Company's Leadership Team and makes recommendations regarding how best to mitigate, control or accept climate-related risks.

Carpenter Technology's Board of Directors is ultimately responsible for prioritizing and managing the impact of climate-related risks along with the overall responsibility for ESG governance and strategy. The Corporate Governance Committee ("CG Committee") of the Board of Directors receives regular updates regarding Carpenter Technology's ESG Program, including identified climate-related risks. The CG Committee reviews with management significant Company strategies and practices relating to sustainability, corporate responsibility and ESG matters in furtherance of the Company's business strategy, Core Values and purpose.

### **Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.**

Carpenter Technology maintains an ongoing enterprise risk management program which is reassessed annually. Previously identified ESG and climate-related risks are integrated and evaluated as part of this program, which is overseen by the Audit Committee of the Board of Directors.

## METRICS & TARGETS

**Disclose the metrics used by the organization to assess climate related risks and opportunities in line with its strategy and risk management process.**

Carpenter Technology tracks the following metrics relevant to climate-related risks and opportunities:

- Scope 1 and 2 GHG emissions
- Air emissions, including GHGs, nitrogen oxides (NOx), sulphur oxides (SOx), volatile organic compounds (VOCs) and hazardous air pollutants (HAPs)
- Energy consumption, including fuel and electrical grid
- Waste generated, including non-hazardous and hazardous, and recycling
- Water withdrawal and recycling

Data can be found on our reporting page at [CarpenterTechnology.com/Sustainability](https://CarpenterTechnology.com/Sustainability).

**Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.**

In 2021, Carpenter Technology's Scope 1 emissions totaled 288,000 metric tons of CO<sub>2</sub>; Scope 2 emissions totaled 51,333 metric tons of CO<sub>2</sub>.

In 2022, Carpenter Technology's Scope 1 emissions totaled 298,000 metric tons of CO<sub>2</sub>; Scope 2 emissions totaled 26,000 metric tons of CO<sub>2</sub>.

For historical GHG emissions data, visit our GHG emissions page at [CarpenterTechnology.com/GHG-Emissions](https://CarpenterTechnology.com/GHG-Emissions).

**Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.**

Carpenter Technology has set the goal of reducing intensity of Scope 1 & 2 CO<sub>2</sub> emissions per ton of material by 30% by 2035. We are using 2019 CO<sub>2</sub> emissions as our baseline year, as it was the last full year of operation before the COVID-19 pandemic.

We plan to achieve this through four main activities:

1. Recycle waste heat from our furnaces to improve efficiency of furnace operations
2. Convert natural gas fueled boilers and furnaces to electric
3. Increase the share of carbon-free grid-electricity, using renewable and nuclear-based energy
4. Improve our operational efficiencies

In addition, we will pursue a number of other initiatives that will help us further drive down our CO<sub>2</sub> emissions.