Merck & Co., Inc.

Climate-Related Financial Risk and Opportunity Report using the Task Force on Climate-Related Financial Disclosures (TCFD) Framework

November 2025

Executive Summary

As a global health care company, we recognize that we have a role to play in identifying and responding to the public health risks associated with climate change. In addressing these challenges, we know that not only what we do matters, but also how we do it matters. We are committed to reducing our environmental footprint as part of our mission to save and improve lives around the world. Transparency and consistency in climate disclosure is a cornerstone of global climate action.

The Task Force on Climate-Related Financial Disclosures (TCFD) created a common framework for organizations to utilize to increase their awareness and understanding of their climate-related risks and opportunities by assessing their processes around Governance, Strategy, Risk Management and the creation of appropriate Metrics and Targets. We have prepared this report using the TCFD framework.

We conducted a qualitative assessment of climate risks and opportunities aligned with the TCFD framework. This assessment evaluated potential hazards such as extreme heat, increased precipitation, flooding, drought, and wildfires at 65 Company locations.

Our Company has also completed a climate change transition risk and opportunity assessment based on a low carbon economy scenario aligned with a <1.5°C future, and a high carbon economy scenario aligned with a >4.5°C future.

Governance

Board Oversight

Our Board of Directors (the Board) oversees sustainability matters for the Company through its committees and as a whole. Our Executive Team (ET) and senior management are responsible for reviewing, refining, and implementing our long-term sustainability strategy.

Our ET updates the Board on our long-term sustainability strategy and performance through discussions both as a full Board as well as through committee discussions on specific topics. For example, the Board's Governance Committee monitors and assists the Board in its oversight of environmental sustainability practices and ensures relevant issues are subject to review by Board Committees with relevant areas of competency. The Governance Committee also receives regular updates on Environmental, Health and Safety matters.

The Audit Committee of the Board is responsible for reviewing the Company's Enterprise Risk Management (ERM) process to ensure it is robust and functioning effectively.

Management Oversight

The groups below are responsible for directing the day-to-day supervision of our environmental sustainability strategy and driving performance:

Our Environmental, Health and Safety (EHS) Council is a cross-functional body, chaired by our General Counsel with leadership representation from each area of our business, and is responsible for overseeing our environmental sustainability strategy, policy, and risk mitigation controls. It monitors performance against our targets and increases transparency on environmental matters within the Company, the ET, and the Board. The EHS Council meets on a quarterly basis.

The Global Safety and Environment (GSE) vice president communicates progress on environmental sustainability goals, objectives and other material issues to the Board, ET, and EHS Council.

Our cross-functional Environmental Sustainability Implementation Steering Committee was designated by the EHS Council to oversee the progress of initiatives that support the achievement of our public targets and provide guidance on resourcing of our environmental sustainability strategy.

Strategy

In 2025, our Company performed a TCFD-aligned qualitative physical climate risk and climate change transition risk and opportunity scenario assessment. This qualitative assessment covered the following timeframes:

- Short-term: present day (2025/2026)
- Medium-term: 2030
- Long-term: 2045

The findings of the TCFD scenario assessment were shared with the broader enterprise in order to embed mitigation and adaptation practices into our on-going operations.

Scenario Analysis

The Company conducted a Climate Scenario Analysis in 2025, and the results are provided below.

Physical Climate-related Risk Assessment

Our physical risk assessment included 65 sites that meet our environmental data collection criteria, which encompasses sites that are large enough to have a material impact on our carbon emissions and/or water intake. These facilities include our manufacturing, research and development, warehousing, and corporate functions, and are distributed across the globe. While we evaluated all sites for risk, we dove deeper into our ten most business-critical sites, with business criticality determined by site value and/or criticality of products produced or stored at the site.

Two different climate scenarios were modeled in the physical scenario assessment, one for a low-carbon economy (LCE) and one for a high-carbon economy (HCE). We used the SSP1-RCP1.9 and IEA NZE 2050 pathways in conjunction, which both model a <1.5°C future for the LCE scenario. The SSP5-RCP8.5 pathway, which models a 3-4+°C future, was used to model the HCE.

Descriptions of the scenarios used are as follows:

- SSP1-RCP 1.9 (Shared Socioeconomic Pathways 1 – Representative Concentration Pathway 1.9) reflects a future where there is a gradual but effective shift in development, policy, and economic growth that keeps global temperatures under 1.5°C of warming by 2100.
- IEA NZE 2050 (International Energy Association Net Zero Emissions 2050) shows a pathway where energy systems across the globe shift to Net Zero Emissions by 2050 in a fashion that leads to a greater than 50% probability that global temperature increase is <1.5°C.
- SSP5-RCP8.5 (Shared Socioeconomic Pathways 5 – Representative Concentration Pathway 8.5) reflects a future that takes a “business as usual” approach to fossil fuel consumption without significant mitigation measures.

Our assessment evaluated both chronic and acute physical climate hazards. The hazards evaluated are as follows:

- Extreme heat
- Extreme cold
- Wind speed
- Acute precipitation
- Chronic precipitation
- Storm
- Hail
- Wildfires
- Drought
- Coastal flooding
- Fluvial flooding
- Pluvial flooding

Metrics within each hazard were then used to evaluate the potential effect of the given climate risk. For example, the metric to determine the risk level for extreme heat is days >35°C (95°F) per year.

Each site was evaluated for the climate hazards listed above under the two scenarios discussed for short-, medium-, and long-term timeframes. Relevant site data was collected and analyzed, including geographical location and business value of the site. The evaluation used a baseline year of 1995 to determine the increase in likelihood of an event occurring at each site. Severity was determined by the percentage increase in likelihood of an event occurring in the relevant timeframes versus baseline year.

Physical Climate-related Risk Assessment Results

As a result of the physical climate-related risk assessment, we found that our sites faced increased physical risk exposure across the Company and all regions. The greatest increase in risk comes from increased exposure to extreme heat, rain, and drought, though all risks considered in the assessment appeared as increased hazards across our pool of studied sites. For example, under a HCE scenario in 2045, we projected our manufacturing sites to see over a 100% increase in extreme heat days, and our laboratories to see almost a 200% increase in extreme heat days. Depending on the hazards and location, our Company could experience a variety of impacts, including, but not limited to:

- Increased operational costs due to damage to facilities and supply chain disruption
- Higher insurance premiums for facilities in highly exposed geographies
- Personal safety and health risks to employees.

Under a HCE scenario, our Company's exposure to physical climate hazards is expected to increase across short-, medium-, and long-term horizons.

- In the short-term, localized events such as acute precipitation and flooding may begin to disrupt operations and supply chains in certain regions.
- In the medium-term, the frequency and intensity of heat, drought, and severe weather events are projected to increase, raising operational and logistical considerations across a broader set of sites.
- In the long-term, chronic climate trends such as sustained heat stress and water related challenges such as drought are expected to intensify, particularly in North America and Asia where our Company has significant operations and supply chain dependencies. Variability at the site level underscores the necessity for developing customized assessments in the future, as some specific high-value locations are anticipated to experience comparatively greater exposure to heat and drought, potentially necessitating targeted adaptation measures.

When conducting our analysis, we placed higher focus on long-term risks, as any adaptation measures taken as a result of our long-term risks will also cover our short and medium-term risks. Understanding our short- and medium-term risks help us prioritize our adaptation measures.

By identifying the climate-related risks that pose the most risk to our facilities, we can adequately prepare, plan, and mitigate these risks to our Company operations in a world affected by climate change. We plan to circulate this information to facility planning staff and facility leadership in order to prioritize implementation of resiliency measures.

See Table 1 for a summary of our results.

Table 1: HCE Physical Risk Summary

	EXTREME HEAT	PRECIPITATION	FLOODING	DROUGHT	WIND SPEED	FIRE	HAIL	EXTREME COLD
Regions	Regional applicability							
North America								
Europe								
Asia								
South America								
Africa								

Values are for 2045 in a high-carbon scenario (SSP5-8.5) | Precipitation column denotes acute precipitation exposure | Flooding column denotes combined exposure to coastal, fluvial, and pluvial flooding

Transition Risk and Opportunity Assessment

Our Company also completed a TCFD-aligned climate change transition risk and opportunity assessment to identify the risks and opportunities to our Company from two different carbon scenarios. For the transition risk and opportunities assessment, we used the same LCE and HCE scenarios as we did for the physical risk assessment.

To further explore issues most relevant to our Company, we chose to focus our transition scenario analysis on two transition risks: 1) carbon pricing and tax schemes and 2) increased raw material scarcity. We also analyzed one transition opportunity, which is an increase in consumer preferences for sustainable products.

Climate-related Transition Risk and Opportunity Assessment Results

Our analysis of potential carbon taxes and carbon pricing revealed that we have more financial exposure under a LCE scenario than a HCE scenario. The potential business impact is highly mitigated, however, if we continue on our pathway to meet our net-zero by 2045 commitment, as reduced fossil-fuel use will result in less exposure to carbon pricing mechanisms. Our analysis of our transition risks for raw materiality availability revealed supply chain constraints in both the LCE and HCE scenarios. In a LCE, the main risk derives from an industry shift towards sustainable procurement, resulting in a “green premium” with alternative material procurement and supply chain due diligence directives. For a HCE, increased intensity or frequency of adverse climate events may lead to increased supply chain disruptions and constraints for climate vulnerable commodities/raw materials.

We found that consumer preferences present economic opportunities for our Company in both the LCE and HCE scenarios, however the opportunities themselves differ. In a LCE scenario, consumer preferences for increased sustainability in products create an opportunity for our Company to have a competitive advantage in customer contracts. As the geographical range of infectious diseases change due to a HCE, our Company may be called upon to meet the challenge to provide access to medicine for vulnerable populations. The pharmaceutical industry will need to support adaptation to public health risks in human and animal populations.

Organizational Resilience

Our scenario analyses have helped us explore the potential climate change-related risks to our Company under different scenarios. In general, our diverse, global product lines, including both human health and animal health products, help to mitigate risk in any one area. We have also fully incorporated sustainability into our capital planning, further increasing our resiliency.

The information and knowledge gained during the scenario analysis exercise will help us integrate climate considerations further into our business planning processes, risk management, and overall strategy.

Risk Management

Identify Risk

Our Company leverages a multi-faceted approach to risk identification, assessment, and mitigation through our overarching enterprise risk management (ERM) process. The ERM process allows for full Board oversight of the most significant risks facing our Company and was established to ensure a complete Company-wide approach to evaluating risk over six distinct but overlapping risk areas: responsibility and reputation, strategy, operations, compliance, reporting, and safety.

Our ERM process seeks to identify emerging risks and address them appropriately to limit negative consequences to our Company and the data we maintain. Its goal is to provide an ongoing review, implemented across our Company and aligned to our values and ethics, to identify, assess, and monitor risk and agreed-upon mitigating action. Furthermore, if a risk transforms into an incident, the ERM process ensures that effective response and business continuity plans are in place.

If the ERM process identifies a material risk, it is elevated through the CEO and the ET to the full Board for consideration. Through the ERM process, each Board committee oversees specific areas of risk relevant to the committee through direct interactions with the CEO, members of the ET and the heads of business divisions, compliance, and corporate functions. A Board committee may address risks directly with management or, where appropriate, may elevate a risk for consideration by the full Board or another Board committee.

Climate-related risks, like any other identified risk, are evaluated for their impact such as potential financial implications and operational disruption. Our Company believes that climate change could present risks to our business. These potential risks are integrated into the Company's business planning, including investment in reducing energy usage, water use and greenhouse gas (GHG) emissions.

Managing Risk

Management is responsible for identifying, assessing, and managing risk through the ERM process, and the Audit Committee of the Board is responsible for reviewing the ERM process to ensure it is robust and functioning effectively. Overseeing risk is an important component of the Board's engagement on strategic planning. The Board's approach to overseeing risk management leverages the Board's leadership structure and ensures the Board oversees risk through both a Company-wide approach and within specific areas of competency. Specifically, the Board oversees risk through the ERM process and functioning of Board Committees.

Currently, as part of the ERM process, groups within our Company identify, execute and retain risk mitigation plans. Climate-related risks are integrated into the ERM process, and follow the same identification, assessment, and management principles as any other risk type.

Mitigation plans are prepared to address identified risks. An example of the process we have in place to track and identify transitional risks is the monthly regulatory review performed by our

GSE group, which monitors legislation related to climate change at the global, regional, country, and local level. Addressing risk at the asset level is performed by our site management and emergency services groups which plan for and react to immediate and near-term physical risks caused by climate change.

We have several initiatives dedicated to managing climate change-related risk across the enterprise. Examples include:

Low Carbon Transition Playbook

We created tools such as the Low Carbon Transition Playbook (LCTP) to support our sites' energy reduction and transition plans. The LCTP is a living document resulting from a cross functional effort that pulled together Company experts in a "design-thinking" workshop to develop strategies to reduce GHG emissions. The LCTP includes a gap assessment for sites to evaluate the maturity of their energy programs. It also helps create short- and long-term plans to reduce sites' carbon intensity, build toward a low-carbon future and plan for net-zero. In 2024, we updated the latest version of the LCTP to include new technological solutions for energy reduction as well as an improved reporting interface to promote best practice sharing across sites.

This LCTP will be a key resource for sites to implement following the qualitative physical climate risk and climate change transition risk and opportunity scenario assessment. See the "Strategy" section for further details regarding this assessment and the identified risks and opportunities.

Funding and Net-Zero Road Maps

To advance our journey toward achieving net-zero GHG emissions, in 2024 GSE and business continuity groups embedded sustainability mitigation and adaptation practices into all capital projects and on-going operations, regardless of their size and scope.

In 2024, we also made a strategic decision to prioritize the creation of our net-zero roadmaps focused on energy consumption and decarbonization projects for our top emitting sites across our Company. As part of this initiative, we have incorporated over 90 new capital projects into our long-range capital plan. To ensure the successful implementation of our net-zero roadmap, our Enterprise Capital Committee—a cross-functional leadership team responsible for ensuring our portfolio of capital projects aligns with our Company strategy and long-range operating plan—has incorporated emissions impact into its decision-making process by approving the Environmental Sustainability Capital Principles that are now reflected in our building design standards. This means the Enterprise Capital Committee now considers the GHG emissions impact of all proposed capital projects or investments, which will enable us to achieve our goals.

In addition, we updated the systems used for capital governance and reporting to provide greater transparency around emissions and sustainability-related spending for each of our capital investments. This enhancement not only enables us to track and report on our sustainability performance more effectively, but also reinforces our commitment to integrating environmental considerations into our financial decision-making processes. It also

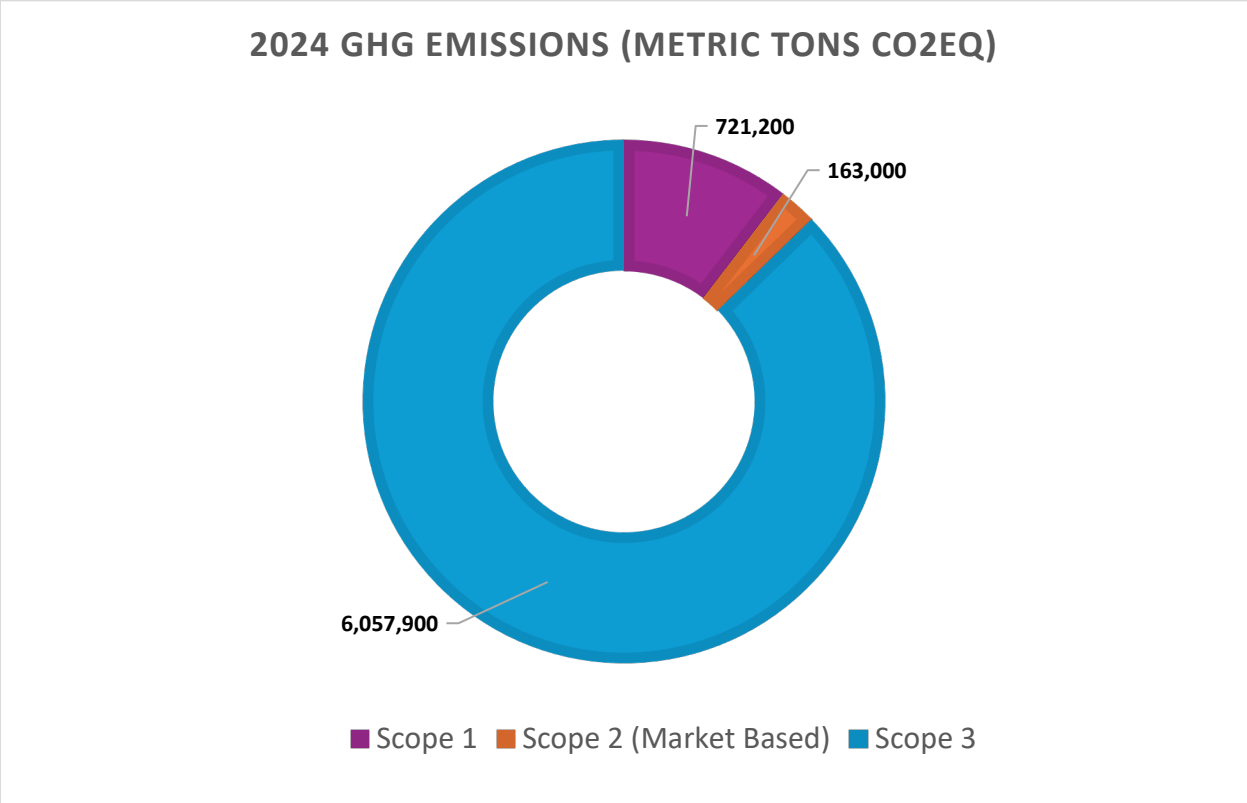
demonstrates our dedication to aligning financial decisions with environmental sustainability goals within our standard capital allocation business processes. This approach will allow us to prioritize our investments that not only drive business value but also contribute to reducing our overall carbon footprint in Scopes 1 & 2.

Green and Sustainable Science Program

Green and sustainable science is the development and application of green chemistry principles and quantitative sustainability metrics and goals to the process of scientific inquiry. We employ this green and sustainable science framework because we recognize that our ability to meet our environmental sustainability goals is intrinsically linked to the creation of innovative, cost-efficient manufacturing processes with low environmental impact. Green and sustainable commercial chemical route development also helps mitigate potential issues in the supply chain in the future by reducing our current raw material requirements. Our objective is to be the industry leader for the development of innovative, efficient, green and sustainable commercial syntheses of our small molecule active pharmaceutical ingredients (APIs) from sustainable commodity raw materials. We are also exploring ways to reduce the environmental impact of biologics and vaccine manufacturing.

Metrics and Targets

Our 2024 scopes 1, 2, & 3 emissions performance:



We have set the following science-based GHG emissions reduction targets, which have been validated by the Science Based Targets Initiative (SBTi) to conform to the SBTi Corporate Net Zero Standards and Guidance, and have included below progress to achieving these goals as of December 31, 2024:

1. Reduce our operational GHG emissions (i.e., Scopes 1 & 2) 46% by 2030, from a 2019 baseline.
    a. Progress: 16% reduction in scope 1 and 2 emissions from 2019 baseline as of the end of 2024[1].
2. Reduce our value chain (scope 3) GHG emissions by 30% by 2030, from a 2019 baseline.
    a. Progress: 6% decrease in scope 3 emissions from 2019 baseline as of the end of 2024[2].
3. Achieve net-zero greenhouse gas (GHG) emissions (Scopes 1, 2 & 3) by 2045.

In addition, we have committed to source 100% of our purchased electricity from renewable sources by 2025.

- Progress: 61% of purchased electricity sourced from renewables in 2024[3].

By continuing to work towards and eventually achieving these targets while also planning for and managing risk, our business will be better positioned for a future affected by climate change and a transition to a LCE.

[1] Scope 1 GHG emissions are direct emissions from owned or controlled sources such as on-site fuel combustion and fleet vehicles. Scope 2 GHG emissions are indirect emissions from the generation of purchased energy consumed by the reporting company.

[2] (a) Scope 3 GHG emissions include all other indirect emissions in a company's value chain. (b) In 2024, we initiated a work process with our suppliers to collect and report their activity data related to our Scope 3 emissions in place of our input/output spend modeled data, when available. Our 2019-2024 Scope 3 performance data and goals were updated to include this data.

[3] We have defined "purchased electricity" as electricity sourced from external suppliers as well as renewable electricity that was generated and utilized on site where we retained the renewable attributes or where we have obtained renewable attributes through contract.