2023 / 2024

Impact Report

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About this report

This is the 2023/2024 Impact Report of Merck & Co., Inc., Rahway, NJ, USA, which is known as MSD outside the United States (U.S.) and Canada. All data is current as of December 31, 2023, unless otherwise noted. Information on documents filed with the Securities and Exchange Commission (SEC), such as our 2023 Form 10-K and 2024 proxy statement, can be found on our corporate website, which is intended only for residents of the U.S. and Canada.

To align with U.S. government reporting requirements, the data for gender diversity in this report uses the terms men and women. We recognize and embrace the gender spectrum and diversity of our employees, and have internally established voluntary Self-ID options for employees to self-report on their gender identity. The totals in this report may not equal 100 percent due to rounding or employees who have not reported their gender and/or race/ethnicity.

Forward-looking Statement of Merck & Co., Inc.

This report of Merck & Co., Inc., Rahway, NJ, USA (the "Company") includes "forward-looking statements" within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. These statements are based upon the current beliefs and expectations of the Company's management and are subject to significant risks and uncertainties. There can be no guarantees with respect to pipeline candidates that the candidates will receive the necessary regulatory approvals or that they will prove to be commercially successful. If underlying assumptions prove inaccurate or risks or uncertainties materialize, actual results may differ materially from those set forth in the forward-looking statements.

Risks and uncertainties include but are not limited to, general industry conditions and competition; general economic factors, including interest rate and currency exchange rate fluctuations; the impact of pharmaceutical industry regulation and health care legislation in the United States and internationally; global trends toward health care cost containment; technological advances, new products and patents attained by competitors; challenges inherent in new product development, including obtaining regulatory approval; the Company's ability to accurately predict future market conditions; manufacturing difficulties or delays; financial instability of international economies and sovereign risk; dependence on the effectiveness of the Company's patents and other protections for innovative products; and the exposure to litigation, including patent litigation, and/or regulatory actions.

The Company undertakes no obligation to publicly update any forward-looking statement, whether as a result of new information, future events or otherwise. Additional factors that could cause results to differ materially from those described in the forward-looking statements can be found in the Company's Annual Report on Form 10-K for the year ended December 31, 2023 and the Company's other filings with the Securities and Exchange Commission (SEC) available at the SEC's Internet site (**www.sec.gov**).

Overview

In this section:

Our Company
Highlights
CEO letter
Select awards and recognition
Our corporate Strategic Framework
Our approach to sustainability
UN Sustainable Development Goals (SDGs)

Our Company

We use the power of leading-edge science to save and improve lives around the world.

For over a century, we have brought transformative science to society by developing and delivering life-changing medicines and vaccines to patients who need them. As a leading biopharmaceutical company, we are at the forefront of scientific research, working tirelessly to provide innovative health solutions to advance the prevention and treatment of diseases in both humans and animals.

In addition to our scientific priorities, we also work to foster a diverse and inclusive global workforce, to ensure a safe and sustainable future for our communities, and to operate responsibly every day.

This report includes our voluntary disclosures against the Environmental, Social & Governance (ESG) reporting frameworks we've prioritized, and covers our enterprise-wide operations from January 1, 2023, to December 31, 2023, with some information on activities that took place in 2024.

Global Reporting Initiative (GRI) /Sustainability Accounting Standards Board (SASB) disclosures in this section:

GRI 2-1	GRI 2-12	GRI 2-13	GRI 2-14	GRI 2-22	GRI 3-1	GRI 3-2
GRI 3-3						

*For more info on disclosures, see the **Reporting indices**.*

How we operate

We are a global health care company that delivers innovative health solutions through our medicines, including biologic therapies, vaccines and Animal Health products. In the U.S. and Canada, we are known as Merck & Co., Inc., or Merck. Outside of the U.S. and Canada, we are known as MSD. We manage our business through two operating segments, Pharmaceutical and Animal Health.

The Pharmaceutical segment includes human health pharmaceuticals and vaccine products. Human health pharmaceutical products consist of therapeutic and preventive agents, generally sold by prescription, for the treatment of human disorders and diseases. We sell these products primarily to drug wholesalers and retailers, hospitals, government agencies and managed health care providers such as health maintenance organizations, pharmacy benefit managers and other institutions. Human health vaccine products consist of preventive pediatric, adolescent and adult vaccines. We sell these vaccines primarily to physicians, wholesalers, distributors and government entities.

The Animal Health segment discovers, develops, manufactures and markets a wide range of veterinary pharmaceutical and vaccine products, as well as health management solutions and services for the prevention, treatment and control of diseases in all major livestock and companion animal species. We also offer an extensive suite of digitally connected identification, traceability and monitoring products. We sell our Animal Health products to veterinarians, distributors, animal producers, farmers and pet owners.

*For more information on our business, please see our **2023 Form 10-K**.*

As of Dec. 31, 2023, we had approximately:

72,000

Employees worldwide

More than

550 million

People reached with our medicines and vaccines in 2023 (p. 20)

Annual revenue in 2023:

$60.1 billion

R&D spend in 2023:

$30.5 billion

Highlights

Access to Health

>550 million
People reached with our medicines and vaccines in 2023 (p. 20)

240 million
People enabled to access our innovative medicines and vaccines through access solutions in 2023 (p. 33)

>54 million
People, underserved by health care, reached through our social investments (2021-2023) (p. 40)

79%
Of countries reached globally with our products in 2023 (p. 28)

83%
Of the top 20 global burdens of disease addressed by our pipeline and products (p. 22)

Employees

>99%
Parity indicated in our global pay equity study for female employees compared to their male colleagues. For the third year in a row, we have maintained greater than 99% pay equity by race as well as gender in the U.S. (p. 61)

>21,000
Employees are members of at least one of our 10 Employee Business Resource Groups, nearly 30% of our global workforce (p. 57)

51%
Women comprise more than half of our global workforce (p. 60)

Environmental Sustainability

Net zero
Committed to a net-zero target for our greenhouse gas (GHG) emissions across our global operations (Scopes 1, 2, and 3) by 2045, aligned with the guidelines of the Science Based Targets initiative (SBTi) (p. 75)

6
Times since 2017 we've been honored as a winner of the Green Chemistry Challenge Awards sponsored by the Environmental Protection Agency (EPA) and/or the American Chemical Society (p. 100)

Ethics & Values

24/7
Availability of our MSDethics.com reporting tool, which allows employees and third parties to raise concerns confidentially and anonymously (where permitted by law) (p. 103)

>99%
Employees who completed our Leading With Ethics & Integrity training series in 2023 (p. 104)

$3.6 billion
Spending with small and diverse Tier 1 and 2 suppliers globally in 2023 (p. 119)

10 points
Allocated to certain sustainability metrics tied to Access to Health and Employees out of 100 points in our 2023 Company Scorecard, which is used to determine the payout of our annual incentive plan for most employees, including our executives (p. 10)

CEO letter

Dear Stakeholders,

For more than a century, we've been devoted to innovative scientific discovery, delivering medicines and vaccines to address critical health needs, optimizing the efficiency of our supply chain, increasing diversity in clinical trials, evolving our Merck Manual for medical reference and so much more. Importantly, everything we do is inspired by our purpose—to save and improve the lives of people and animals around the world. By harnessing leading-edge science, we've tackled some of the world's biggest health challenges for generations, and we remain committed to expanding access to life-changing medicines, vaccines and technologies for many more decades to come. Operating our business responsibly and sustainably is at the core of our values and foundational to our ways of working and business operations.

To help propel our purpose, we continue to prioritize our ambitious sustainability goals, which span four key focus areas: 1) Access to Health; 2) Employees; 3) Environmental Sustainability and 4) Ethics & Values.

Over the last year, our concerted focus on innovation, collaboration and delivering significant and sustained stakeholder value has driven remarkable progress and impactful outcomes. To these ends, I'm proud to share the following key accomplishments:

Expanding and enabling access to health

Enabling access to health underpins every action we take and every decision we make. Across our enterprise, we collaborate with global partners and stakeholders to advance our scientific discoveries, expand and enable access to our medicines and vaccines, and implement initiatives that drive health equity. In 2023, we reached more than 550 million people with our medicines and vaccines through commercial channels, clinical trials, voluntary licensing and product donations. These critical efforts include our MECTIZAN® Donation Program, the longest-running disease-specific drug donation effort of its kind, which aims to combat river blindness and lymphatic filariasis and reached approximately 385 million people last year.

In 2023, we also expanded on our 2021 access to health ambition, and now have a new goal to enable 350 million more people to access our medicines and vaccines by 2025. In 2023 alone, our efforts enabled access for 240 million people. Our products were delivered to nearly 80% of countries globally. And through our social investments, including partnerships to advance health equity and other impact initiatives, we reached more than 54 million people in low- and middle-income countries and populations underserved by health care in high-income countries, surpassing our goal of reaching more than 50 million people by 2025.

Developing and rewarding a diverse, inclusive and healthy workforce

We believe the best path to value creation is through our talent, and the variety of backgrounds and ideas they bring are central to the success of our company. Diversity, equity and inclusion is a business imperative. It improves our understanding of our customers, promotes the inclusion of diverse populations in our clinical trials and inspires the innovation that drives our business. We remain committed to actively cultivating a talented, diverse and inclusive workforce that best represents—and can thus best serve—our customers, health care providers and patients.

In 2023, we defined and introduced 15 new enterprise leadership skills, designed to further advance our culture, power organizational and individual performance, and drive value for our stakeholders and communities.

We continue to nurture a diverse, equitable and inclusive workplace. Women comprise 51% of our global workforce, 50% of our board of directors, and in 2023, our global pay equity study indicated a greater than 99% parity in compensation between female and male employees. Further, in the U.S., for the third year in a row, we have achieved greater than 99% pay equity across race and gender.

Embodying and prioritizing environmental stewardship

We know the global health of people and animals is inextricably linked to the health of the planet. This is why we are committed to playing an active role in mitigating the impacts of climate change. Notably, in 2024, we committed to be net-zero across Scopes 1, 2 and 3 greenhouse gas emissions by 2045, aligned with guidance from the Science Based Targets initiative.

Our environmental sustainability strategy is designed to achieve our objectives by focusing on three critical areas: operational efficiency, designing new products to minimize environmental impact, and reducing the impacts in our upstream and downstream value chain. And we have been recognized with six consecutive Green Chemistry Challenge Awards—nine overall—as a result of our ongoing efforts to minimize the footprint of our products. The awards are sponsored by the Environmental Protection Agency and the American Chemistry Society and recognize new and innovative environmentally conscious chemistry technologies.

Holding ourselves to the highest standards

We operate responsibly every day in every way, and we hold ourselves accountable to the highest standards of ethics and values. Our code of conduct is our compass, ensuring we maintain our reputation as a trusted, credible and responsible company. It also encourages employees to speak up and report potential concerns to ensure our ethics and values are reflected in our business operations. We maintain full compliance with all privacy and data regulatory requirements related to active incident monitoring, risk/harm analysis and on-time notification of data breaches.

We are also a signatory to the United Nations Global Compact (UNGC), and we align our operations with the Ten Principles of the UNGC to improve communities around the globe.

Additionally, we increased our spend with small and diverse Tier 1 and 2 suppliers from $3.2 billion in 2022 to $3.6 billion in 2023, fostering a healthy, equitable and diverse supply chain.

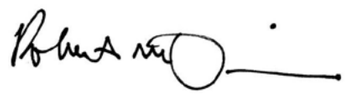
In 2023, we also added sustainability metrics to our Company Scorecard, which directly correlates to our annual incentive plan. The metrics link the compensation for most employees, including executives, to our performance in driving greater access to health care and employee engagement and inclusion. And I'm pleased to report that, in our inaugural year, we achieved all of our goals for these new sustainability metrics on our Company Scorecard.

Sustaining our momentum

I am very proud of our collective progress and the positive impact we've made on the lives of people, animals and communities around the world. In 2023, Merck was named one of the Top 100 Most Sustainable U.S. Companies by Barron's and one of America's Most JUST Companies by JUST Capital and CNBC. And notably, we ranked No. 1 in the health sector for both recognitions. This year, we were also recognized on TIME's inaugural list of the World's Most Sustainable Companies, ranking No. 28 out of 500 companies. These honors are a testament to our unwavering passion and commitment to saving and improving lives globally.

I remain confident that we can do even more to further advance global health and access, drive diversity, equity and inclusivity, protect the environment and operate responsibly. I'm excited and energized by the possibilities of our science-led strategy, the promise that our short- and long-term efforts present, and the positive, sustainable impacts that we can make today and well into the future.

My sincerest thanks for your continued support as we pursue a healthier and brighter future for all.



Very best regards,

Rob Davis
Chairman & Chief Executive Officer

Select awards and recognition

We're proud that our longstanding commitment to drive responsible actions has received external recognition as we strive to manage sustainability-related risks and create value for our business, society and our stakeholders.

Barron's
Top 100 Most Sustainable U.S. Companies—#38 overall and #1 in the sector (2024)

Fortune
#62 on the 100 Best Companies to Work For® list (2024)

Newsweek
America's Most Responsible Companies—#1 overall and #1 in the sector (2024)

Seramount
One of the 75 companies on the Top Companies for Executive Women list (2023)

JUST Capital
America's Most JUST Companies—#25 overall and #1 in the sector (2024)

TIME
#28 on the World's Most Sustainable Companies list (2024)

Our corporate Strategic Framework

Our Priorities

- Invest in, augment, and accelerate our pipeline to deliver life-changing products
- Demonstrate value to our stakeholders and extend access to solutions that address unmet medical needs
- Drive innovation, growth and productivity enabled by digital and data
- Invest in the growth, success, and well-being of our people

Our Ways of Working

Win as one team | Focus on what matters | Act with urgency | Experiment, learn and adapt | Embrace diversity and inclusion | Speak up and be open-minded

Our Values

- Patients First
- Ethics and Integrity
- Respect for People
- Innovation and Scientific Excellence

We operate responsibly every day on behalf of society, shareholders and all our stakeholders to enable a safe, sustainable and healthy future for people and communities everywhere.

Our approach to sustainability

Our strategy includes a commitment to integrating sustainability at every level of our business operations. By doing so, we create opportunities to serve our patients, employees and society, as well as to bring value to our business and shareholders.

Building on our legacy of stewardship, we drive progress in our four longstanding focus areas:

- **Access to Health**—In collaboration with key stakeholders, we work to ensure our science advances health care, and our products are accessible and affordable around the world
- **Employees**—Our success is built on a culture that embraces different perspectives and values the contributions of each individual. We recognize that our competitiveness is strengthened by a diverse, skilled and engaged workforce.
- **Environmental Sustainability**—A healthy planet is essential to human and animal health and the sustainability of our business, while also providing opportunities for product innovation and reduction in costs and risks. We have a long history of environmental stewardship and compliance, and we continuously evolve our strategy and efforts in the face of a changing climate.
- **Ethics & Values**—Our ethics and values drive everything we do, creating an accountable culture that enhances our decision-making and ability to deliver on our purpose.

We're strategically embedding actions across our focus areas to serve our most important stakeholders: our patients.

Our sustainability efforts aim to position us as a partner of choice within the global health ecosystem to drive environmental and social change, to build stakeholder trust, to improve our long-term business performance, to increase investment flow, and to cultivate a diverse and inclusive culture where best-in-class talent chooses to work. This approach also manages risks across our supply chain and business operations, increases patient and investor confidence, brings in new opportunities with customers and peers and builds stronger communities through our health equity initiatives.

To be successful, proactive and meaningful engagement with stakeholders is critically important to building enduring relationships and fostering more collaborative partnerships. This ensures that our strategies are informed, relevant and aligned, with both societal needs and business objectives.

Our corporate Strategic Framework

For over a century, our unwavering dedication to operating responsibly has been a hallmark of our identity. This commitment is integral to our corporate Strategic Framework (see next page), and underscores our pledge to foster a safe, sustainable and healthy future for communities worldwide.

In 2023, we added sustainability metrics to our Company Scorecard, which directly affects the payout under our annual incentive plan. The metrics account for 10 percent of the Scorecard, and link the compensation for most employees, including executives, to our Company's performance in driving greater access to health care, employee engagement and inclusion. Notably, we met all of the goals for these new sustainability metrics in the first year.

*For more information about our Company Scorecard, please see page 55 of our **2024 proxy statement**.*

Update on our sustainability bond

Through September 30, 2023, we have fully allocated the $994 million of the net proceeds from our 2021 sustainability bond. We allocated approximately 81 percent of the amount to projects that are either completed or underway during the three-year look-back period, and allocated the remaining 19 percent to social and green projects in alignment with our sustainability financing framework.

*For more information, please see our **2023 Sustainability Bond Allocation Report** on our Investor Relations page of our corporate website.*

Sustainability governance

Board of directors

We are committed to governance policies and practices that serve the interests of our business and our shareholders. Our governance structure is an integral part of this commitment. Our Board of Directors oversees ESG matters for the Company, through its committees and as a whole. Our Executive Team and senior management are responsible for reviewing, refining and implementing our long-term sustainability strategy. Through groups such as the Strategic Policy & Sustainability Council, our senior leaders direct the day-to-day supervision of this strategy.

Our Executive Team updates the Board on our long-term sustainability strategy and performance through both discussions as a full Board as well as through Committee discussions on specific topics. For example, the Board's Governance Committee, which monitors and assists the Board in its oversight of sustainability matters, ensures relevant issues are subject to review by Board Committees with relevant areas of competency.

Corporate governance	2019	2020	2021	2022	**2023**
Independent directors on the Board	12	12	12	12	**11**
Board members who are independent	92%	92%	86%	92%	**92%**
Separate chairman of the Board and CEO[1]	No	No	Yes	No	**No**
Lead independent director	Yes	Yes	Yes	Yes	**Yes**
Women on the Board	46%	46%	43%	46%	**50%**
Members of underrepresented ethnic groups on the Board	23%	31%	21%	15%	**17%**

Note: Except as otherwise noted, all figures above are derived from our proxy statement filed the following year and are rounded.

[1] From July 1, 2021, to November 30, 2022, the positions of Board chairman and CEO were separate. As of December 1, 2022, the positions of Board chairman and CEO are not separate.

*For information on our Board's nomination process and the Board's roles and responsibilities for the management of and reporting on sustainability topics at the Company, please see our **2024 proxy statement** (pages 20-22). For information on how to communicate with the Board, please see page 25 of our proxy statement.*

Management

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

Strategic Policy & Sustainability Council (SPSC)
The SPSC, under the guidance of the Executive Team, ensures we advance our Strategic Framework through public policy and sustainability efforts that proactively shape and respond to the changing regulatory landscape. This group of cross-functional senior leaders makes recommendations to the Executive Team on critical public policy and sustainability issues, and monitors related performance across regions and functions.

ESG Strategy Management Team (ESMT)
With guidance from SPSC, the ESMT advises, shapes and drives our long-term sustainability strategy, including providing recommendations regarding business risks and opportunities. The role of this group of functional experts is to create long-term value, differentiate us as a leader in sustainability and answer to stakeholder demands about key issues across our four focus areas: Access to Health, Employees, Environmental Sustainability and Ethics & Values. The ESMT ensures our strategy and priorities align with and support our corporate Strategic Framework to meet our public commitments and stakeholder expectations.

ESG Strategy & Engagement Team
This team is responsible for raising the visibility of sustainability-related issues and activities, as well as fostering connections across business units and functional areas to assist with the integration of sustainability principles into business policies, strategies and practices. This includes producing our annual Impact Report.

Governance of environmental sustainability

Our Environmental, Health and Safety (EHS) Council is a cross-functional body 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 issues within the Company, the Executive Team and the Board.

The Global Safety and Environment (GSE) vice president communicates progress on environmental sustainability goals, objectives and other material issues to the Board, Executive Team and EHS Council. The GSE vice president is also a part of the Strategic Policy & Sustainability Council (SPSC). Additionally, the head of the Environmental Sustainability Center of Excellence (CoE) is a member of the ESMT.

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.

*For information on environmental health and safety management and governance, please visit the **Sustainability Resources page** on our corporate website.*

ESG impact materiality assessment

We conduct an ESG impact materiality assessment to focus, act and report on the most critical potential business risks and opportunities that influence our ability to create value. We assess the external landscape, our business priorities, and the issues that are critical for our stakeholders and the planet, to prioritize the most important topics that will be managed through our sustainability strategy.

In our 2023 ESG impact materiality assessment, the following topics emerged as the most critical. They are grouped below by our focus areas:

Access to Health

- Access to health care and medicine (pages **18-44**)
- Equity and affordability (pages **33-44**)
- Product safety and quality (pages **106-112**, **Clinical trials**)
- Public health risks (pages **18-44**)

Employees

- Employee diversity and inclusion (pages **55-61**)
- Employee health and safety (pages **62-69**)
- Talent management (pages **46-54**)

Environmental Sustainability

- Climate change risks and management (pages **74-83**)

Ethics & Values

- Ethical corporate behavior (pages **102-105**, **Code of Conduct & Compliance**)
- Privacy and data security (pages **124-126**, **MSD Privacy**)

Our approach to ESG impact materiality assessment

To conduct the assessment, we began with a list of material issues for our industry, including:

- Access to health care and medicine
- Air emissions
- Business model resilience
- Climate change risks and management
- Community relations
- Competitive behavior
- Customer practices
- Customer privacy and data security
- Ecological impacts
- Employee diversity and inclusion
- Employee health and safety
- Energy management
- Equity and affordability
- Ethical corporate behavior
- Ethics in R&D
- GHG emissions
- Governance structures and mechanisms
- Human rights
- Innovation and technology
- Labor practices
- Management of local impacts
- Management of the legal and regulatory environment
- Natural capital
- Physical and sociopolitical risks
- Product and service safety and quality
- Product design and lifecycle management
- Public health risks
- Responsible consumption and production
- Selling practices and product labeling
- Sourcing efficiency and management
- Talent management
- Transition to renewables and alternative energies
- Transparency
- Waste and hazardous materials management
- Water and wastewater management

We then partnered with a third party to scan competitor, supplier and customer ESG reports and financial communications, as well as news sources and mandatory and voluntary regulations from around the world. We coupled this assessment with surveys to our leaders as well as to investors we engage with regularly on sustainability-related topics.

We also conducted ESG impact materiality assessments in 2015, 2018 and 2021.

Our approach to stakeholder engagement

We engage with a diverse group of stakeholders to gain insights that can inform our efforts and foster our progress toward solutions that benefit society and support our business.

We note many of these engagements in this report, and the groups of stakeholders with whom we regularly engage include:

Patients and caregivers

For patient communities—which include individual patients, their caregivers and family members, patient advocacy leaders and patient organizations—it is critical that we respect and honor their life experiences to better understand their health care journeys, expected outcomes and decision-making considerations.

*For more information on our work with patient groups, please see our **Patients page** which includes our **Commitment to Patients** on our corporate website.*

Shareholders

Throughout the year, we regularly engage with our shareholders and seek to better understand their perspectives.

We have a proactive shareholder engagement program, in which members of Investor Relations, the Office of the Secretary, Human Resources and the ESG Strategy & Engagement Team, as well as other subject-matter experts, engage with our shareholders to remain well-informed regarding their perspectives on current issues and to address any questions or concerns. These teams serve as liaisons between shareholders, members of senior management and our Board.

In addition, we conduct an extensive shareholder outreach program twice a year focused on governance, executive compensation and ESG matters. We believe it is most productive to discuss these matters well in advance of the Annual Meeting of Shareholders. This enables management and the Board to gather investor perspectives and make educated and deliberate decisions that are balanced and appropriate for our diverse shareholder base and in the best interests of our business.

*For more information on our engagements with shareholders, including topics discussed, please see our **2024 proxy statement** (pages 24-25).*

Health care professionals

We are committed to providing appropriate and balanced information to physicians and other health care professionals about our medicines, vaccines and ongoing research.

*For more information on our work with health care professionals, please see pages **18-44**, and for our disclosures on payments to health care professionals, please visit the **Transparency Disclosures page** on our corporate website.*

Employees

We strive to foster a positive and inclusive working environment for our employees by providing resources to improve their health and that of their families, as well as opportunities to further their professional development and get more involved in the communities where they live.

As part of our efforts to maintain a satisfying and productive work environment, we routinely survey employees to learn about their perspectives on the business and on how we are responding to the needs of our global workforce. The Employee Pulse Survey, our all-employee engagement survey, is our flagship employee feedback mechanism and is conducted multiple times a year.

*To learn more about our work with employees, please see pages **45-72**.*

Payers

We work with payers worldwide to inform their understanding of the relationship between the prices of our products and the true value they deliver to patients and health care systems.

*For more information on our work with payers, please see our 2023 Pricing Action Transparency Report on the **Sustainability Resources page** of our corporate website.*

Governments, multilateral organizations and regulators

We work with policymakers, legislators, multilateral organizations and governments worldwide to ensure that policy and regulatory environments globally, nationally and locally foster patient access to medicines and vaccines, and that these environments are conducive to ethical business practices, science and innovation.

*For more information on these engagements, please see pages **127-129**.*

Suppliers and business partners

We encourage responsible approaches on the part of suppliers regarding labor, employment, human rights, health and safety, ethics, diversity and protection of the environment. In addition, we strive to engage small and diverse suppliers.

*To learn more about our work with suppliers, please see pages **113-123**.*

Trade and industry associations

We engage with stakeholders through our membership in numerous organizations. We are a member of many industry and trade groups. We work with these groups because they represent the pharmaceutical industry and business community in debates led by governments and other stakeholders, and because they help the industry reach consensus on policy issues.

*To learn more about our work with industry and trade organizations, please see pages **127-129**.*

Veterinary professionals and animal caretakers

We value our partnerships with veterinary professionals and animal caretakers as a way to contribute to the health of the animals in their care with innovative products and solutions for farm and companion animal species. We regularly communicate and collaborate with our customers and industry leaders in our shared pursuit of improving the health of animals.

*To learn more about our work with veterinarians and animal caretakers, please visit the **Animal Health website**.*

Local communities

We work toward developing culturally appropriate mechanisms to engage and build relationships with our local community stakeholders and non-governmental organizations (NGOs). We conduct this engagement predominantly through our philanthropic efforts, which can be found on the **Philanthropy page** on our corporate website.

Sustainability goals and performance

Our goals represent our public commitments to delivering value to society. Over the past year, we challenged ourselves to continue meaningful progress towards our ambitious commitments within each of our focus areas. Through collaborative partnerships and a holistic approach, we're creating scalable solutions to major global issues.

Access to Health

As a research-intensive biopharmaceutical company, expanding access to health is central to our purpose to save and improve lives. We discover, develop and deliver innovative medicines and vaccines. In collaboration with key stakeholders, we help ensure our science advances health care, and our products are accessible and affordable globally. We also apply our expertise and financial resources to address systemic barriers to health equity, where we believe we can make the strongest contributions to health systems, communities and patients.

Goals (in millions)	2021	2022	2023	TOTAL
Further advance health equity by reaching 50 million people in LMICs and people underserved by health care in high-income countries with our social investments by 2025.[1,2]	15.0	18.6	**21.2**	**54.8**
Reach at least 75% of countries around the world annually with our products.[3]	79%	76%	**79%**	
Enable 350 million more people to access our innovative medicines and vaccines globally through access solutions by 2025.[4]	66.7	189.2	**240.0**	

Employees

Our success is built on a culture of diversity and inclusion, recognizing the invaluable contributions of each individual. We are dedicated to cultivating a workforce that is not only diverse and skilled but also engaged, recognizing this as a critical driver of our competitiveness.

Goals	2021	2022	2023
Maintain or exceed our current inclusion index score by 2025.[5,6]	On track	On track	**On track**
Maintain or exceed our current employee engagement index score by 2025.[5,6]	On track	On track	**On track**

[1] Social investments include our Company's philanthropic partnerships, programs and impact investments. Underserved populations are defined as those that face health disparities due to disadvantages related to insurance status, social determinants of health, race, ethnicity, gender identity/sexual orientation, age and/or language preference. The goal is cumulative across the reporting period of 2021-2025 and is independent of a baseline period. Actuals for each year to date are based on reports received between the 1st of March and the last day of February of the corresponding performance year.

[2] Third-party reporting is used to calculate the number of people reached through social investments. In some cases, third-party reports may include cumulative people reached for the reporting period, and/or data that is attributable to other partners as well as our Company's philanthropic investment.

[3] Countries are as defined by the World Bank Country and Lending Groups. Includes only human health products.

[4] Metrics contributing to this goal are displayed on an annual basis and provide information on the number of people who we estimate now have the option to access medicines and vaccines as a result of our sustainable access strategies, solutions and partnerships. These solutions include our commitment to Gavi and UNICEF (rather than doses shipped), collaborations to optimize resources in health systems, expanded financial coverage through insurance, and new community-based channel partnerships. "Innovative medicines and vaccines" refers to our Company's on-patent products. Enable "more people" is defined as populations supported by initiatives implemented and launched in market and will be in comparison to the baseline (2020) as of 2025. Evidence for metrics is sourced from publicly available data and proxy sources by market. While proxies differ by market, all methodologies are evaluated and represent our best estimate of people enabled to access innovative medicines and vaccines. People who were enabled to access innovative medicines and vaccines did not necessarily receive such innovative medicines and vaccines.

[5] In 2022, we revised employee survey measurements to align with evolving best practices. In this report, 2022 data are used as the baseline for future comparison.

[6] The Pulse survey is open to employees globally.

Environmental Sustainability

We recognize the vital connection between the health of our planet and the well-being of people and animals. We have adopted a set of climate goals to help us succeed in an increasingly resource-constrained world.

Goals	2021	2022	2023
Reduce our operational GHG emissions (i.e., Scopes 1 & 2) 46% by 2030, from a 2019 baseline.[1]	10% below baseline	8% below baseline[2]	**12% below baseline**
Reduce our value chain (Scope 3) GHG emissions by 30% by 2030, from a 2019 baseline.[3]	2% above baseline	2% below baseline	**4% below baseline**
Source 100% of our purchased electricity from renewable sources by 2025.[4]	41%	45%	**57%**
Achieve net-zero greenhouse gas (GHG) emissions (Scopes 1, 2 & 3) by 2045.	In 2024, we committed to a net-zero target for our greenhouse gas (GHG) emissions across our global operations (Scopes 1, 2, and 3) by 2045, aligned with the guidelines of the Science Based Targets initiative (SBTi).		

[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] In accordance with the World Resource Institute's GHG Protocol, prior-year data have been adjusted to add or remove facilities that have been acquired, sold or spun-off. Adjustments also reflect changes in methodology to ensure consistency from year to year, including Scope 2 emission factor updates [E-GRID (2023), IEA (2023), EU Residual (2023), UK Defra (2023) & Inventarios Corporativos (2023)] and Scope 1 & 3 emission factor updates [EPA Climate Leaders (2023)].

Ethics & Values

We are committed to upholding integrity and the highest ethical standards in everything we do. We foster a workplace environment where employees can voice their opinions safely and freely. By grounding our operations in our core ethics and values, we cultivate accountability that enhances our decision making, adaptability and reliability.

Ethics & Values	2021	2022	2023
Foster a "Speak Up" culture by maintaining or exceeding our current percentage of global employees responding favorably to the "Willingness to report" question in an internal survey as an annual average, by 2025.[5,6]	—	On track	**On track**
Maintain 100% compliance to privacy and data protection regulatory requirements for active incident monitoring, risk/harm analysis and on-time notification of data breaches.[7]	100% compliance maintained	100% compliance maintained	**100% compliance maintained**

[3] Scope 3 GHG emissions include all other indirect emissions in a company's value chain. Emissions were based on our economic input-output model using our third party spend. Whenever possible, we replaced the relevant emissions calculated from our spend-based model with primary emissions data provided directly from our suppliers or calculated emissions data based on the activity. We adjusted our spend-based model to account for foreign exchange and inflation in order to normalize and compare our performance against our baseline year of 2019.

[4] 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.

[5] Favorable response indicates the percentage of respondents who respond "yes" to the question stating, "I am willing to report employee misconduct and potential ethics or compliance issues."

[6] In 2021, we developed the "Willingness to Report" question referenced in footnote 4 to align with evolving best practices. This question was first included in our Pulse survey in March 2022, and 2022 data are used as the baseline against which 2023 data are compared.

[7] Regulatory requirements differ by region.

Our priority United Nations (UN) Sustainable Development Goals (SDGs)

The SDGs represent the international community's plan of action for "people, planet and prosperity." The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for the planet and its people. At its core are the 17 SDGs.

We believe we have an important role and a responsibility to help reduce the burden of disease and improve access to medicines and vaccines around the world. That is why SDG 3 (Good Health and Well-being) is at the heart of our business. It also aligns with our purpose to save and improve lives.

While every SDG is essential to fostering sustainable development, we have prioritized eight (listed above the photo) where we believe we can have the biggest impact.

Access to Health

Expanding access to health is at the core of our purpose to use the power of leading-edge science to save and improve lives. Our focus is on discovering, developing, and delivering innovative products and services that address medical needs and improve health in a responsible and sustainable manner. Our commitment to improving access is embedded in our business strategies and across functions and geographies.

Topics covered in this section:

Discovery and invention

Availability

Affordability and sustainable access

Strengthening health systems and addressing inequity

Goals (in millions)	2023	TOTAL
Further advance health equity by reaching 50 million people in low-income and middle-income countries (LMICs) and people underserved by health care in high-income countries with our social investments by 2025.[1,2]	21.2	54.8
Reach at least 75% of countries around the world annually with our products.[3]	79%	
Enable 350 million more people to access our innovative medicines and vaccines globally, through access solutions by 2025.[4]	240.0	

[1] Social investments include our Company's philanthropic partnerships, programs and impact investments. Underserved populations are defined as those that face health disparities due to disadvantages related to insurance status, social determinants of health, race, ethnicity, gender identity/sexual orientation, age and/or language preference. The goal is cumulative across the reporting period of 2021-2025 and is independent of a baseline period. Actuals for each year to date are based on reports received between the 1st of March and the last day of February of the corresponding performance year.

[2] Third-party reporting is used to calculate the number of people reached through social investments. In some cases, third-party reports may include cumulative people reached for the reporting period, and/or data that is attributable to other partners as well as our Company's philanthropic investment.

[3] Countries are as defined by the World Bank Country and Lending Groups. Includes only human health products.

[4] Metrics contributing to this goal are displayed on an annual basis and provide information on the number of people who we estimate now have the option to access medicines and vaccines as a result of our sustainable access strategies, solutions and partnerships. These solutions include our commitment to Gavi and UNICEF (rather than doses shipped), collaborations to optimize resources in health systems, expanded financial coverage through insurance, and new community-based channel partnerships. "Innovative medicines and vaccines" refers to our Company's on-patent products. Enable "more people" is defined as populations supported by initiatives implemented and launched in market and will be in comparison to the baseline (2020) as of 2025. Evidence for metrics is sourced from publicly available data and proxy sources by market. While proxies differ by market, all methodologies are evaluated and represent our best estimate of people enabled to access innovative medicines and vaccines. People who were enabled to access innovative medicines and vaccines did not necessarily receive such innovative medicines and vaccines.

Our approach to access to health

We developed our **Statement of Guiding Principles** to steer our access approach. The below goals demonstrate our ambition:

- Discovering and inventing medicines and vaccines that address global health needs where we can have the greatest impact (for more information, please see pages **22-27**)
- Making available a reliable, safe global supply of quality medicines and vaccines, and investing in solutions to enable timely access to our products in a responsible and sustainable manner (for more information, please see pages **28-32**)
- Developing, testing and implementing solutions that address barriers to affordability and sustainable access of our medicines and vaccines (for more information, please see pages **33-39**)
- Through collaborations, investment and innovation, applying our expertise and investing resources to address systemic barriers to access and health equity (for more information, please see pages **40-44**)

These principles align to our goals and demonstrate our measurable and meaningful actions to advance access to health.

We strive to make our products accessible and affordable to those who can benefit from them. For example, we work with customers to enhance the flow of patient care processes, and with governments and non-governmental organizations (NGOs) to expand health care financing and open new delivery channels for innovative medicines. We also work with multilateral and non-profit organizations on access solutions for LMICs. Strengthening health systems through collaboration is a crucial part of our efforts to enable access to health care that is affordable, efficient, equitable and sustainable on a global scale.

Additionally, we recognize the rising impact of climate change on health. We collaborate to mitigate that impact through our environmental stewardship and compliance, and by advancing novel medicine and vaccine candidates to address diseases with an increasing prevalence due to changing climate patterns. Our collaborations extend to humanitarian disaster response efforts and strengthening resilience in health systems.

It is essential to balance affordability while appropriately incentivizing the discovery and development of new medicines and vaccines. We believe it is possible to have a pricing system that allows patients to access the latest products while sustaining leading-edge scientific research for future medical innovations. Such inventions are often key to expanding access. For example, the development of new formulations can broaden distribution of medicines and vaccines, including in resource-constrained health systems, or they can help treat earlier-stage diseases where health and economic impacts may be improved.

Reaching people with our medicines and vaccines

We reached 79% of countries with our products in 2023. To understand the reach and impact of our products, we track and report the number of people reached with our medicines and vaccines.

>550 M **people reached with our medicines and vaccines (2023)[1]**

- Commercial channels
- Voluntary licensing
- Clinical trials
- Product donations

[1] This people reached metric estimates the number of people who have received a Merck & Co., Inc. product through commercial channels, clinical trials, voluntary licensing and product donations. Product donations include people reached through the MECTIZAN Donation Program, U.S. Patient Assistance Programs, and the Merck Medical Outreach Program. Sources of data are Merck & Co., Inc. and third-party data sets that are tracked within an enterprise-wide internal database. The people reached metric for all sources is calculated as doses sold divided by the average dose schedule for a given market in a given year. People taking multiple products may be counted as multiple people toward the total estimate. In some instances, this estimate may include people enabled to access our products through access solutions, which are calculated as part of our goal to enable access to our innovative medicines and vaccines (**page 33**). The people reached metric does not include people reached through social investments, which are calculated as part of our goal to further advance health equity for populations in LMICs and underserved by health care in high-income countries (**page 40**).

Enabling sustainable access and strengthening health systems

We also develop, test and implement market-based solutions that address barriers to access, enabling more people to access our medicines and vaccines. In addition, our social investments help to reduce barriers for populations underserved by health care globally.

240 M
people enabled to access our innovative medicines and vaccines (2023)[2]

- Commitment to UNICEF/GAVI
- External financing solutions
- Customer collaborations
- New access channels

>54 M
people reached with our social investments to address health equity (2021-2023)[3,4]

- Merck for Mothers
- Impact investments
- Charitable contributions
- Health equity initiatives

[2] Metrics contributing to this goal are displayed on an annual basis and provide information on the number of people who now have the option to access medicines and vaccines as a result of our sustainable access strategies, solutions and partnerships, including our commitment to Gavi and UNICEF (rather than doses shipped), collaborations to optimize resources in health systems, expanded financial coverage through insurance, and new community-based channel partnerships. “Innovative medicines and vaccines” refers to our Company’s on-patent products. Enable “more people” is defined as populations in initiatives launched in markets as of 2025, in comparison to a 2020 baseline. Evidence for metrics is sourced from the best publicly available data and proxy sources by market. While proxies differ by market, all methodologies are evaluated and represent the best estimate of people enabled to access innovative medicines and vaccines. People who were enabled to access innovative medicines and vaccines did not necessarily receive such innovative medicines and vaccines.

[3] Social investments include our Company’s philanthropic partnerships, programs and impact investments. “Underserved populations” are defined as those that face health disparities due to disadvantages related to insurance status, social determinants of health, race, ethnicity, gender identity/sexual orientation, age and/or language preference. The goal is cumulative across the reporting period of 2021-2025, and is independent of a baseline period. Actuals for each year to date are based on reports received between the 1st of March and the last day of February of the corresponding performance year.

[4] Third-party reporting is used to calculate the number of people reached through social investments. In some cases, third-party reports may include cumulative people reached for the reporting period, and/or data that are attributable to other partners as well as our Company’s philanthropic investment.

We build accountability for access improvements into our governance. Our Executive Team and senior management review, refine, and implement our long-term sustainability strategy, which includes our approach to global access. Our Strategic Policy & Sustainability Council (SPSC) provides oversight and guidance to ensure alignment with our strategic objectives.

For the first time, in 2023, our commitment to access is also part of our Company Scorecard and approved by the Board of Directors' Compensation and Management Development Committee. In addition to other metrics, the Company Scorecard incorporates sustainability metrics, including access to health metrics, which directly impact annual incentive pay for executives and most employees.

Policies:

Access to Health Statement of Guiding Principles

Antimicrobial resistance global Action Plan

Access to our vaccines

Access to investigational medicines

Charitable product donations

European Union health technology assessment regulation

Health technology assessment

Intellectual property

Real-world evidence

External charters, principles and initiatives that guide our work in our Access to Health focus area:

- AMR Industry Alliance: Common Antibiotic Manufacturing Framework
- AMR Industry Alliance: Industry Roadmap for Progress on Combating AMR
- Health for Animals: Antibiotics Commitment
- Declaration of Helsinki
- International Council for Harmonisation: Good Clinical Practice (ICH-GCP)
- International Federation of Pharmaceutical Manufacturers & Associations (IFPMA) Code of Practice
- The Kigali Declaration on Neglected Tropical Diseases
- U.S. National Academy of Sciences: Guidelines for Human Embryonic Stem Cell Research

Discovery and invention

We discover and invent medicines and vaccines to address vital global health needs where we can have the greatest impact, now and in the future. In 2023, our research and development (R&D) expenses were $30.5 billion, including $17.1 billion in charges for several significant business development transactions, as well as clinical development and discovery research spending.

As part of our R&D efforts, we collaborate with academic institutions, non-profit organizations, government entities and other biopharmaceutical/ biotechnology companies to help us advance the latest science and ultimately bring medicines and vaccines to patients.

Clinical trials are a critical part of how we advance scientific innovations. We are committed to the study of appropriately diverse patient populations, including groups who have been previously underrepresented in clinical trials: women and children, people of varying ages, sexual orientation and gender identities, various socioeconomic, ethnic and demographic backgrounds, and other characteristics.

During development, we evaluate the potential of our pipeline candidates to address medical needs and significant public health challenges. When a candidate has potential for significant public health impact, our product development teams plan ways to provide access for the future.

Finally, once approved, we endeavor to ensure our products are available in every country where we conducted clinical trials.

$30.5 billion
In total R&D expenses

83%
Of the top 20 global burdens of disease (GBD) addressed by our pipeline and products

76
Significant external R&D licenses and collaborations

>100,000
People reached through clinical trials in >50 countries

GRI/SASB disclosures in this section:

GRI 203	SASB 240a.1

*For more info on disclosures, see the **Reporting indices**.*

*For more information on our R&D efforts, please visit the **Research & Products page** on our corporate website.*

Reflecting global health care needs in R&D

As defined by the global burden of disease (GBD) visualization tools developed by the **Institute for Health Metrics and Evaluation** (IHME), our products address diseases that rank high on the list of worldwide causes of illness, disabilities and death. In addition, our vaccine and infectious disease research targets major burdens of disease, including in LMICs, where health care infrastructure may be resource-constrained.

Considering our pipeline, the products we market, and our external collaborations, we estimate that our Company is seeking to address 83 percent of the top 20 GBD (this figure excludes road injuries and age-related hearing loss) as defined by the IHME, the same percentage in 2023 as in 2022. Of note, the most recent version of the GBD by the IHME is from 2019.

We strive to discover treatments for diseases that affect people across a breadth of countries, such as cardiovascular disease, which the World Health Organization (WHO) identifies as the world's leading cause of death. We have a long history of developing treatments for cardiovascular disease. More than 60 years ago, we introduced our first cardiovascular therapy and our efforts to understand and treat cardiovascular-related disorders have continued, including with our investigational, once-daily oral proprotein convertase subtilisin/kexin type 9 (PCSK9) inhibitor, currently being evaluated in adults with hypercholesterolemia. Despite the invention of several well-established lipid-lowering therapies, millions of people globally do not achieve their desired low-density lipoprotein (LDL) cholesterol treatment goals, leaving them at risk for cardiac events. In 2023, we began three Phase 3 studies evaluating our PCSK9 inhibitor, including for its potential to reduce cholesterol and improve cardiovascular outcomes.

"The initiation of a comprehensive Phase 3 program is an important milestone in our goal to offer a highly effective oral medication with the potential to provide access to a broad population and potentially allow substantially more people to reach their LDL treatment goals. In acknowledgment of the significant racial, ethnic and gender disparities in cardiovascular care, we are taking proactive measures to engage potential participants from populations that have historically been underrepresented in clinical trials of this type."

Dr. Joerg Koglin, Senior Vice President, Merck Research Laboratories

R&D collaborations

In 2023, we entered into 76 significant external licenses, collaborations and acquisitions with a broad range of partners, from early-stage science to clinical-stage programs. These collaborations are deemed "significant" because they involve an asset or technology with the potential to enhance our R&D capabilities or portfolio.

Hilleman Laboratories: A first-of-its-kind R&D joint venture

In collaboration with the Wellcome Trust, we founded Hilleman Laboratories over 10 years ago, a first-of-its-kind R&D joint venture to facilitate wider, affordable access to life-saving vaccines and biologics in LMICs. Our longstanding support for Hilleman Laboratories is part of our efforts to explore a continuum of approaches and partnership models to better enable supply stability and facilitate more equitable access to innovative health products in low-resource settings.

Research and development	2019	2020	2021	2022	**2023**
R&D expenses (in billions)[1,2]	$9.7	$13.4	$12.2	$13.5	**$30.5**
Top 20 global burdens of disease addressed by our products and pipeline[3]	100%	88%	71%	83%	**83%**
Established significant external licenses and collaborations[4]	78	123	92	97	**76**

[1] R&D expenses include a $2.7 billion charge in 2020 related to the acquisition of VelosBio, Inc., a $1.7 billion charge in 2021 related to the acquisition of Pandion Therapeutics, Inc., $1.7 billion of intangible asset impairment charges in 2022, and charges of $17.1 billion in 2023 for the acquisitions of Prometheus Biosciences, Inc., and Imago BioSciences, Inc., and the formation of collaborations with Daiichi Sankyo and Kelun Biotech.

[2] The historical results of the businesses that contributed to Organon & Co. in the 2021 spin-off have been reflected as discontinued operations in the Company's consolidated financial statements through the date of the spin-off and therefore are excluded from the 2019, 2020 and 2021 figures presented.

[3] All calculations for our Company's GBD impact are based on the latest IHME report available, from 2019. As such, impact from more recent diseases like COVID-19 is not accounted for. We also do not include road injuries or age-related hearing loss in our GBD accounting since they are not subject to pharmaceutical intervention.

[4] These partnerships are deemed "significant" because they involve an asset or technology with the potential to make an important enhancement to our R&D capabilities.

R&D investments and collaborations for LMICs

We have a strong legacy of infectious disease research, including for diseases that greatly impact people in LMICs like respiratory syncytial virus (RSV), tuberculosis (TB), human immunodeficiency virus (HIV), malaria and dengue.

RSV is a contagious, widespread seasonal infection. Though almost all children contract it at least once before they are two years old, for some, it can be complicated. An estimated 95 percent of RSV infections and more than 97 percent of RSV-related deaths globally occur in resource-limited countries, making RSV a substantial burden of disease in these settings. We are evaluating a monoclonal antibody for the prevention of RSV in infants and certain children over age one.

In 2022, we entered into a licensing agreement with the Gates Medical Research Institute (Gates MRI) for two preclinical candidates discovered at our Company with potential in combination regimens for treating TB, one of the top 10 causes of death in LMICs. In early 2023, one of these compounds entered a Phase 1 clinical trial. Our scientists discovered the compounds as part of the TB Drug Accelerator (TBDA), a collaboration among biopharmaceutical companies, research organizations and universities to accelerate new TB therapies, supported by the Gates MRI. The licensing agreement with Gates MRI, facilitated through the TBDA, and covering preclinical candidates, is an example of a collaboration that can help advance drug candidates toward becoming potential novel combination TB treatments.

HIV is a global epidemic that disproportionately affects people in sub-Saharan Africa. In fact, according to IHME, two-thirds of the more than 38 million people with HIV reside in the region, accounting for about 75 percent of HIV-related deaths globally. For more than 35 years, we have researched ways to address the HIV epidemic. We have a broad R&D program for HIV, including a Phase 3 development program for a new once-daily, two-drug regimen. As part of an agreement with Gilead Sciences, we also have a program evaluating an investigational, weekly oral combination treatment consisting of our antiviral islatravir and Gilead's lenacapavir. Recent Phase 2 data for this investigational oral combination regimen show it maintained viral suppression at 24 weeks, supporting its continued development as a potential long-acting oral combination treatment option in virologically suppressed people with HIV, with the potential to be the first oral weekly HIV treatment.

In addition, we are collaborating on a potential new treatment option for malaria, an infection that the **2023 World Malaria Report** notes is one of the largest causes of death in pregnant women and children under age 5 in most resource-poor countries. Importantly, there is rising resistance to existing malaria treatments. A new antimalarial drug candidate, discovered through our longstanding collaboration with the Walter and Eliza Hall Institute of Medical Research in Australia and with funding from the Wellcome Trust, recently entered into clinical development.

New formulations

Innovation goes beyond new treatments. With a focus on reducing pill burden by investigating the potential to provide long-acting options to enhance the patient experience, we strive to provide options that increase the ease of administering treatments. For example, in HIV, we are researching long-acting medications designed to reduce the frequency of administration, which may benefit patients and resource-constrained health systems.

Dengue

According to the **WHO**, climate change is a significant contributing factor to the increase in the incidence and spread of dengue. Changes in climate patterns, including temperature and rainfall, can influence the breeding, survival, and behavior of mosquitoes that transmit the dengue virus. About half of the world's population, or 4 billion people, is at risk for dengue, primarily in tropical and sub-tropical regions. We are committed to addressing dengue through development of our investigational vaccine, currently in late-stage development.

Since 2018, we have collaborated with Instituto Butantan, a non-profit producer of immunobiologic products for Brazil, to share data and learnings from our respective dengue vaccine programs. Instituto Butantan is also developing an investigational vaccine for which it will seek regulatory approval in Brazil; we plan to seek regulatory approval in many countries outside of Brazil.

Systematic evaluation to inform product access strategies

We are implementing a new collaborative enterprise go-to-market model that facilitates access to health considerations early in a product's development.

This framework helps us evaluate our pipeline candidates and identify their potential in addressing significant public health burdens and unmet medical needs, particularly in underserved health care settings, including LMICs. The insights from this evaluation process inform our product development and access strategies, with the overarching objective of expanding availability of our medicines and vaccines to as many individuals as possible in an economically sustainable manner.

Starting early in development, we conduct a comprehensive evaluation of our candidates' potential to address unmet medical needs, particularly in LMICs. This early and systematic evaluation encompasses multiple factors, including the understanding of barriers to access, medical needs and economic considerations. Candidates having significant potential to benefit populations in underserved settings are assessed for investment in access solutions, with the intent of enabling wider patient reach globally. Furthermore, we recognize the importance of understanding the existing health system infrastructure and funding mechanisms, as they play a crucial role in facilitating the safe and effective use of our products and ultimately enhancing patient access.

Our R&D and enterprise-level governance committees are accountable for evaluating our candidates as a part of the standard development process. Their recommendations are reviewed at internal, cross-divisional forums of senior leaders. To account for changes in the external environment, products continue to be evaluated for their potential to address disease burdens throughout their lifecycle.

Sometimes the evaluation of a candidate reveals barriers to access in LMICs or underserved settings. In these situations, the evaluation can inform how we might strengthen health systems and improve health equity. We recognize that addressing the complex and multi-faceted challenges to access in LMICs requires collaborating with multiple stakeholders and seeking partnerships that enable health care access.

Increasing diversity of patients in clinical trials

In 2023:

- 337 late-stage studies, across
- >21,000 sites in >50 countries, and
- >100,000 people reached in clinical trials

Clinical trials are critical to advancing scientific innovations and we are determined to expand access to them—including through increased racial and ethnic diversity among trial participants. In 2023, we reached more than 100,000 people through our clinical trials in more than 50 countries worldwide.

Increasing the diversity of participants in clinical trials requires a comprehensive approach, which is why we are addressing a variety of associated factors.

For late-stage trials, we require plans to recruit patients who reflect the diversity of the people who will use our products. In addition, we prioritize placement of U.S. study sites in communities with higher populations of individuals who have historically been underrepresented in clinical trials. And, we provide resources and training to improve diversity in clinical research. For example, we established a community advisory board to gain firsthand insights and incorporate the voice of the patient in our site and patient engagement methods. We've also established a new role—research navigator—at 12 key U.S. partner sites to aid diverse enrollment.

Collaborations are a vital part of increasing participant diversity. In 2022, we joined the Novartis-led collaboration, Beacon of Hope, a 10-year program that establishes clinical trial centers of excellence at four historically Black medical schools, to increase diversity among clinical trial investigators and participants. We also contribute to sponsorships to connect with, support and train clinicians from underrepresented groups.

To ease logistical barriers that make it difficult for some patients to visit clinical trial sites, we're working with Greenphire, a provider of global financial lifecycle management solutions for clinical trials. The organization's ClinCard debit card provides direct stipends and travel reimbursement for clinical trial participants. In addition, we have developed tools to reach study participants within their communities, such as our partnerships with BlackDoctor.org and Acclinate, leading organizations focused on increasing awareness of clinical trials among diverse participants. We also co-sponsor the Improving Patient Access to Cancer Clinical Trials (IMPACT) study at the Lazarex Cancer Foundation. IMPACT is a three-year pilot program that strives to increase the diversity of people enrolled in clinical trials, as well as to improve retention and equitable access in oncology trials. We also implement novel tools and approaches to build relationships and reach potential study participants within their communities.

Consistent with the International Conference on Harmonisation: Good Clinical Practice (ICH-GCP) requirements, as part of the informed consent process, we make clinical trial participants aware of the compensation or treatment available to them and whom to contact in the event of a treatment-related injury. In addition, we maintain procedures that address the costs of treatment in the event of trial-related injuries, in accordance with applicable regulatory requirements.

Availability

Our Company is committed to a comprehensive global supply chain management strategy that addresses accessibility, agility, resilience, capability and sustainability on a global scale.

Our commitment to global product availability is reflected in our goal to reach at least 75 percent of countries worldwide annually with our human health medicines and vaccines. In 2023, we exceeded expectations by reaching 79 percent of countries, surpassing our goal for the third consecutive year and showcasing our dedication to extending the accessibility of our life-saving products across the globe.

Goal	2023
Reach at least 75% of countries around the world annually with our products.[1]	**79%**

[1] "Countries" are as defined by the World Bank Country and Lending Groups. Includes only human health products.

GRI/SASB disclosures in this section:

GRI 203 SASB 240a.1 SASB 240a.2

*For more info on disclosures, see the **Reporting indices**.*

Commercialization and supply chain planning

Our approach to commercialization, manufacturing, and supply chain planning focuses on extending access to our products, driving innovation through digital tools, and demonstrating value to our stakeholders. We are using a collaborative enterprise go-to-market model to allow earlier planning for all markets, including high-, middle- and low-income countries. The aim is to enable access to our medicines and vaccines globally, including the areas of the world where they are needed most.

Our supply chain operations are integrated across the enterprise, playing a crucial role along product lifecycles. We design supply chains comprised of internal sites and external partners that enable resiliency while improving access in a sustainable way.

Our Digital Logistics Program helps build the supply chain of the future and ensure continuous supply of critical medicines and vaccines to patients worldwide through efficient, tech-enabled operations. The cloud-based data integration service gives insights into the physical flow of our products, minimizing disruptions and improving service and security while reducing costs.

Availability[1]	2020	2021	2022	**2023**
Countries around the world reached with our products (Target: 75%)[2]	78%	79%	76%	**79%**
Orders shipped on time and in full (Target: 95%)	98%	98%	98%	**98%**
Logistics partners with security-risk assessment completed, annually (Target: 100%)	100%	100%	100%	**100%**

[1] Reporting on these metrics began in 2020.
[2] Countries as defined by the World Bank Country and Lending Groups. Includes only human health products.

Maintaining and sustaining a global supply network

Maintaining product quality is paramount. To provide high-quality medicines and vaccines to people who need them, when and where they need them. We manage our supply chain through policies and procedures designed to keep the distribution system secure, agile and efficient.

We strategically design our supply chain networks while monitoring evolving pipeline, global and market dynamics. The integration of new partners and novel modalities further diversifies the supply chain landscape (e.g., small molecules, macrocyclic peptides, biologics, antibody-drug conjugates, and vaccines), and helps to enable a secure and continuous distribution of medicines and vaccines globally.

Our supply chain strategy is built on resilience. Initial and periodic security-risk assessments for logistic partners and contract manufacturers align with our unwavering commitment to robust safety measures. We are committed to achieving a 100 percent security-risk completion rate for all new logistics partners during the logistics procurement process, as we did in 2023. These assessments set a critical baseline to measure security risk at the onset of the business relationships and ensure alignment with our supply chain security standards to protect our products and patients. This planning enables us to continue to surpass our target of 95 percent of orders shipped on time and in full, with an achievement of 98 percent in 2023 (see Availability table to the left).

This commitment to resilience is evident in our proactive risk preparation, including assessment and mitigation of risk related to geopolitical events, natural disasters and pandemics. Our supply chain's ability to promptly re-route shipments, use agile cold-chain technologies, and proactively address disruptions demonstrates the strength of its framework, and our commitment to sustain a global supply of products for patients.

*For more information on our supply chain operations see the Supply Chain section on page **113**, Serialization and product security section on page **111**, and the Climate risk assessment section on page **75**.*

Registering medicines and vaccines where there is need

Product registration and prequalification

We seek to ensure global access to our medicines and vaccines by maintaining up-to-date product registrations around the globe. In 2023, we registered 159 products and devices, with most of these in LMICs in the Asia Pacific, Central and Eastern Europe, Middle East and Africa, and Americas regions.

In addition to having our medicines and vaccines approved by regulatory authorities and enhancing access to LMICs, we also pursue WHO prequalification for certain medicines and vaccines so they can be more easily procured by and distributed to LMICs. The table to the right summarizes the registration and WHO prequalification status of a select list of our medicines and vaccines.

WHO prequalification facilitates product procurement by United Nations' agencies in many LMICs. In the absence of stringent national medicine authorities, it certifies that products meet required quality, safety and efficacy standards. WHO's prequalification program covers routine vaccines and medicines for HIV/AIDS, malaria, TB, hepatitis, diarrheal diseases and select neglected tropical diseases.

We work to address the unique needs of LMICs where the infrastructure and personnel to deliver immunization services can be severely limited. Specifically, we have focused on product improvements such as the introduction of vaccine vial monitors (VVMs) to assess controlled-temperature-chain conditions.

Products prequalified by WHO	International nonproprietary name (INN)	Date of prequalification	Number of countries prequalified in 2023
Vaccines			
M-M-R®II	Measles, Mumps, Rubella Virus Vaccine Live	January 2009	76
ROTATEQ®	Rotavirus Vaccine, Live, Oral, Pentavalent	October 2008	121
GARDASIL®	Human papillomavirus vaccine [types 6, 11, 16, 18] (recombinant, adsorbed)"	May 2009	129
GARDASIL® 9	Human papillomavirus 9-valent vaccine (recombinant, adsorbed)[1]	February 2018	90
VARIVAX®	Varicella Virus Vaccine Live (first varicella vaccine to receive WHO prequalification)	February 2018	86
ERVEBO®	Ebola Zaire Vaccine, Live	November 2019	45
HIV/AIDS treatments			
STOCRIN®	Efavirenz (600 mg tablet, Oral Solution 30 mg) Efavirenz (50 mg tablet, 200 mg tablet)	May 2006, May 2008	46

[1] Not currently available through UNICEF procurement; awaiting VVM.

Product registration	2019	2020	2021	2022	**2023**
New product registration (annual)[1]	97	79	141	156	**159**
Products submitted that have achieved WHO prequalification (cumulative)[2,3]	13	13	7	7	**7**
Number of patent applications filed in low-income countries[4]	0	0	0	0	**0**

[1] Data include new products and new indications.

[2] Three products previously reported are no longer part of the Company's product portfolio due to the Organon & Co. spin-off in 2021.

[3] Three GARDASIL® products that had been previously reported separately are reported as one product starting in 2021.

[4] Countries classified as low-income countries in the 2023 World Bank Country and Lending Group classifications.

Manufacturing and supplying vaccines

We are committed to vaccine accessibility and have specific strategies in place to enhance the availability of vaccines.

In the last few years, various countries have introduced new or expanded routine vaccination programs, creating unprecedented increases in global vaccine demand. To meet this, we continue to increase our capacity and supply capabilities. We plan to invest approximately $18 billion in supply-related capital projects from 2023-2027, with a portion dedicated to vaccines. We also continue to invest in manufacturing and end-to-end supply improvements in both capability and capacity to help ensure a sustainable, reliable supply of quality and affordable vaccines.

Partnering to fortify vaccine supply

In Canada, we partnered with the Ministry of Health, a pharmacy chain, and a distributor in a groundbreaking supply chain initiative that introduces a blockchain-based secure network for real-time tracking of vaccine doses. The technology allows for seamless vaccine transfer and enhances end-to-end visibility across the supply chain. It also revolutionizes inventory management, creating a collaborative network where stakeholders share and visualize inventory, improving distribution and preventing supply issues.

Partnering to reduce cervical cancer in Indonesia

In alignment with the HPV National Immunization Program in Indonesia, our Company forged a pivotal partnership with a local manufacturing company (Bio Farma) in late 2022 through the signing of a technology transfer agreement. This strategic collaboration facilitated the transfer of technology and localized production of our 4-valent HPV vaccine within Indonesia's borders. By establishing local manufacturing capabilities, this agreement facilitates enhanced accessibility and distribution of this vaccine in Indonesia. Distribution commenced in August 2023, with the goal of vaccinating up to three million age-appropriate girls in Indonesia. Given the high prevalence of HPV-related cervical cancer in Indonesia, our partnership holds promise in helping expedite the country's journey towards reducing cervical cancer.

Enhancing data and decision making for access planning

We recognize the importance of integrated access planning, data, and decision making throughout the supply chain. A coordinated approach ensures the availability of products through streamlined processes, which in turn fosters efficiency and responsiveness to global health challenges.

To improve efficiency and responsiveness, we have developed new methodologies that model demand and capacity. These methodologies help us meet increased patient demands more efficiently and navigate supply chain complexities with strategic foresight and strategic acumen, setting the stage for further advancements in supply chain strategies.

New supply strategies to expand access

Our commitment to expanding access is not just an aspiration but a continuous effort marked by tangible actions and impactful outcomes. In 2023, our Company developed strategic partnerships to enable expansion of product reach to markets that were previously inaccessible. Our Supply Chain Management team is actively engaged in breaking down accessibility barriers by engaging in capability building, forging strategic partnerships, and building a global internal and external supply network. Our Company is transforming its manufacturing approaches to deliver on its promise of making life-saving products accessible to patients worldwide.

Empowering health care: using supply chain capabilities to enhance a Patient Access Program

Through innovative digital capabilities, such as blockchain and serialization, we are leveraging a supply chain initiative to enhance our Patient Access Programs in the Asia Pacific Region. This initiative aims to enhance patient access to our oncology portfolio by ensuring product security and compliance with health authorities' requirements. Through the implementation of end-to-end traceability and package verification, we prioritize patient safety and ensure the integrity of our products.

*For more information on serialization and product security, see page **111**.*

Innovations in supply chain technologies: Driving resilience and agility

Our commitment to advancing health care extends beyond developing innovative biopharmaceuticals. We understand the importance of a robust and efficient supply chain to ensure timely and broad access to life-saving products. As the health care ecosystem and global supply chain dynamics continue to evolve rapidly, we have been leveraging our digital capabilities to be more resilient, enhancing supply chain agility.

With manufacturing operations across the globe, supply chain resilience becomes paramount. With the complexity inherent in biopharma supply chains, proactive identification and mitigation of risks is crucial. One of the ways we are addressing this is by leveraging artificial intelligence (AI) to enhance our ability to identify, monitor, analyze, and respond to supply chain risks globally. Our AI-powered risk orchestration platform and continuous event monitoring provide real-time visibility and enable data-driven decision making. Strong supply chain systems, made more robust with these innovations for efficiency and distribution to under-resourced and remote locations, will be the engine that helps us navigate these challenges.

*For more information on our supply chain operations see the Supply Chain section on page **113**, and the Climate risk assessment section on page **75**.*

Affordability and sustainable access

Inspired by our former CEO George W. Merck, who once said, “We can never rest until a way has been found to bring our finest achievements to everyone,” we are working toward a world where everyone, everywhere, can receive the medicines or vaccines they need, when they need them. We strive to do this in a way that creates sustainable access to our innovative products, creating long-term value for our stakeholders, including shareholders, patients, and health systems.

Grounded in a deliberate systematic approach, our Company develops, tests and implements market-based solutions that address barriers to access and affordability of our medicines and vaccines. This allows us to serve the greatest number of patients today, while meeting the needs of patients in the future. Where appropriate, we pursue these solutions in partnership with private enterprises, government agencies, multilateral and non-governmental organizations. When market-based solutions are inadequate or unavailable, we pursue programs to provide direct access to our medicines and vaccines, including product donations and patient assistance programs.

GRI/SASB disclosures in this section:

GRI 203 SASB 240a.1

*For more info on disclosures, see the **Reporting indices**.*

Having exceeded our initial goal in 2023, we have now set a new goal to enable 350 million more people globally to access our innovative medicines and vaccines by 2025—and we are well on our way. To reach this goal, we are building health care capacity, strengthening channels for care delivery and fostering sustainable financing.

*For more information on how these solutions are working to improve affordability and sustainable access, please see “How we enable affordability and sustainable access to our innovative medicines and vaccines” on page **34**.*

Enabling access to our medicines and vaccines	2019	2020	2021	2022	**2023**
Total number of people enabled to access our innovative medicines and vaccines through access solutions (estimate in millions)[1]	NR	NR	66.7	189.2	**240.0**
People reached globally through product donation and patient assistance programs and partnerships (estimate in millions)[2]	403.7	268.3	197.3	359.2	**385.2**

NR: not reported.

[1] Metrics contributing to this goal are displayed on an annual basis and provide information on the number of people who we estimate now have the option to access medicines and vaccines as a result of our sustainable access strategies, solutions and partnerships. These solutions include our commitment to Gavi and UNICEF (rather than doses shipped), collaborations to optimize resources in health systems, expanded financial coverage through insurance, and new community-based channel partnerships. “Innovative medicines and vaccines” refers to our Company’s on-patent products. Enable “more people” is defined as populations supported by initiatives implemented and launched in market and will be in comparison to the baseline (2020) as of 2025. Evidence for metrics is sourced from publicly available data and proxy sources by market. While proxies differ by market, all methodologies are evaluated and represent our best estimate of people enabled to access innovative medicines and vaccines. People who were enabled to access innovative medicines and vaccines did not necessarily receive such innovative medicines and vaccines.

[2] Includes people reached through the MECTIZAN Donation Program, the MMOP, and the U.S. Patient Assistance Program. Total people reached with the MECTIZAN Donation Program increased in 2023 as partner countries continued to resume additional MECTIZAN distribution following disruptions due to the pandemic. For more information on the details related to the people reached through donations, please see page **38**.

How we enable sustainable access to our innovative medicines and vaccines

We strive—along with many in the health care sector—to find sustainable ways to expand access to our innovative products. We have established a globally available framework for diagnosing barriers to access and for designing and delivering practical solutions to help address them. We also have a dedicated internal unit tasked with accelerating access by evolving our capabilities and capturing learnings across countries, including by helping health care systems better serve those in need through customer collaborations, health care financing, employer benefit design and new delivery channels. Through this approach, we have accelerated the development of patient access models and solutions that expand the populations we can reach.

We remain committed to our goal to enable 350 million more people to access our innovative medicines and vaccines through access solutions by 2025. In 2023, we made steady progress, enabling access for 240 million people (see page **33**).

In collaboration with Financial Times Longitude, we launched the **Sustainable Access website** to advocate for greater stakeholder collaborations to develop, test and scale sustainable access solutions.

Customer collaborations

Some health care systems are challenged with long wait times and capacity constraints related to diagnosis and treatment. That is why we collaborate with more than 80 health care and service providers across Europe and Latin America to understand hurdles and advance solutions that strengthen health care systems.

Using our expertise, particularly in oncology, and our deep understanding of the health care ecosystem, we partner with health systems to better understand cancer patient pathway constraints and to identify solutions that enable access and optimal resource use.

One such approach is in the United Kingdom. Throughout 2023, we completed 16 collaborative projects, and initiated another 32, to support the National Health Services (NHS) in optimizing cancer treatment pathways and expanding capacity. We worked with Lloyds Pharmacy Clinical Homecare to deliver infusion services that sit outside of a university teaching hospital in Newcastle, an area with high cancer prevalence. The outpatient site brings care closer to patients, reducing travel to the city center for treatment and improving the patient experience.

In Colombia, we work with multiple health maintenance organizations and oncology health care professionals to identify inefficiencies and pain points, helping reduce the time to lung and breast cancer diagnosis.

Financing health care

A recurring access challenge in LMICs is the potentially high out-of-pocket costs for critical illness treatments. Recognizing this issue, we work with reinsurers and insurance companies to develop affordable health insurance products that cover innovative cancer therapies.

For example, in China we are collaborating with public health authorities to provide access to immunotherapy financing through supplemental medical insurance, driving greater health care inclusion.

We believe that expanding the reach of insurance products will help solve major access hurdles and, in turn, increase patient access to innovative cancer therapies. This collaborative approach to addressing access challenges reinforces our commitment to being part of a wider ecosystem, working with those with complementary capabilities to tackle access challenges.

Employers' role in benefit design

In the U.S., employers play an important role in the health care system through their employee health plans. The principles of value-based insurance design (V-BID) focus on structuring health plans to incentivize high-value interventions and disincentivize low-value care. V-BID aims to improve patient outcomes and manage costs, allowing funding to be reallocated for innovative new treatments. We have evaluated a V-BID Oncology Pilot that pioneered the use of V-BID principles in corporate cancer coverage for our employees in the U.S. We are also using data to better understand our employees' health risks and our cancer care expenditure to:

- Identify opportunities to move from low-value to high-value care
- Continuously refine and evolve the plan

We have been sharing lessons from this pilot with stakeholders and other employers in hopes it will widen access to quality care.

*Additional information on sustainable access strategies, solutions and partnerships can be found on the **Sustainable Access website**.*

New community-level access channels

We seek strategic partnerships with health care professionals who have the potential to enhance awareness, availability, accessibility and affordability of our products. These partnerships enable access for populations who traditionally have been unable to access innovative medicines and vaccines.

For example, we collaborate with a health care provider who operates across nine African countries to reimagine the prevention, screening and treatment of cervical cancer.

Our commitment to Gavi and UNICEF

We are deeply committed to Gavi, the Vaccine Alliance (Gavi), and UNICEF in their efforts to expand access to vaccines and protect global health. Gavi is a public-private partnership that has made significant strides in immunizing children and reducing child mortality in lower-income countries. Gavi also provides funding support for health systems and global stockpiles of crucial vaccines for Ebola, cholera, meningitis and yellow fever.

As a member of Gavi's board, and the world's largest buyer of vaccines for developing countries, UNICEF has a pivotal role in immunization programs in Gavi-supported countries. UNICEF's Supply Division procures most Gavi-funded vaccines, ensuring their availability and distribution.

Our commitment to helping protect global health by broadening access to our vaccines is fundamental to our mission. To enable further access to our HPV vaccine, to help prevent HPV-related cancers and diseases, we provide the vaccine to Gavi at an access price for use in Gavi-supported countries. Through a long-term agreement with UNICEF, we committed to provide over 115 million doses of our HPV vaccine for use in Gavi-supported countries from 2021-2025.

In addition, for 2021-2025, we committed to extend our current Gavi prices for our HPV vaccine to Gavi-transitioned countries with a per-capita gross national income not exceeding $3,200. This greatly assists in expanding and sustaining access in countries that have transitioned out of Gavi support. We believe our pricing approach for Gavi-supported and -transitioned countries—in conjunction with our commitment to partner with stakeholders to strengthen resilience of immunization programs—contributes to broader access to our vaccines worldwide.

ERVEBO® (Ebola Zaire Vaccine, Live) is the world's first U.S. Food and Drug Administration (FDA)-approved, WHO-prequalified vaccine for the prevention of Ebola virus disease. Through our agreement with UNICEF, we have built a 500,000-dose ERVEBO® stockpile, and we continue delivering licensed doses to maintain it. As of March 2024, the vaccine is approved in 11 African countries.

We are a sponsor of **Investing in Innovation (i3)**, a pan-African initiative to support the commercialization and impact of 60 promising early- and growth-stage African health innovator companies with grants and access supports. A global network of industry players, donors and international organizations sponsors the initiative to support high-potential startups who aspire to transform the availability, accessibility, affordability, quality and visibility of health products at scale across Africa. i3 seeks to advance market access for startups traditionally excluded from funding and support.

Our pricing approach

We believe it is possible to have a pricing system that allows patients to access the latest products while sustaining leading-edge scientific research for future medical innovations. We have a long history of making our medicines and vaccines accessible and affordable through responsible pricing practices and industry-leading patient access programs. We are working to bring our products to more people globally in ways that are as accessible and affordable as possible. While each situation varies based on unique circumstances and market dynamics, generally we consider:

- Value to patients
- Value to health care systems
- Unmet need
- Access
- R&D sustainability
- Competition

U.S. product pricing

In 2017, we began disclosing information about the price of our medicines in the U.S. Our 2023 **U.S. Pricing Action Transparency Report** shows an average annual net price increase of 4.4 percent in 2023. The average annual list price across our portfolio increased by 4.5 percent in 2023 and our gross U.S. sales were reduced by 37 percent in 2023 because of rebates, discounts and returns.

*For more information on our approach to pricing, please see our U.S. Pricing Action Transparency Report, available on the **Transparency Disclosures page** of our corporate website. Additional information on our efforts and suggestions to address patient access challenges in the U.S. is available in our **CEO's testimony** to the United States Senate Committee on Health, Education, Labor & Pensions in February 2024.*

Voluntary licensing

We have experience working with generic manufacturers on global health concerns. Over the last several years, we put this experience to work addressing COVID-19 globally. From the early days of COVID-19, and continuing through 2024, we have helped meet the significant unmet medical need globally through a multi-faceted strategy to enhance access to our investigational COVID-19 oral treatment following regulatory authorization:

- We entered into advance purchase and supply agreements with the governments of more than 40 countries to supply our investigational COVID-19 oral treatment through a tiered-pricing approach based on World Bank criteria to reflect countries' relative ability to finance their health response to COVID-19.
- We signed voluntary license agreements during the clinical development process with multiple Indian generic manufacturers and the Medicines Patent Pool, to facilitate availability of generic versions of our medicine to more than 100 LMICs. These licenses and local manufacturing partnerships provide supply coverage for approximately 90 percent of the population in LMICs.
- We allocated up to three million courses of our supply of medicine to UNICEF for LMICs as a "bridge strategy" until the voluntary licensees were able to provide supply. This strategy has minimized the gap between supply to high-income countries and to LMICs. The supply agreement in place with UNICEF has been extended until the end of 2024.

We welcomed the Gates Foundation's 2021 commitment of **$120 million** to accelerate access to generic versions of our medicine. This commitment complemented our voluntary license agreements and highlights the importance of actions from multiple stakeholders to effectively increase timely access for patients globally. Through our licensing agreements with generics manufacturers and the Medicines Patent Pool, as of the end of 2023, close to six million courses of generic therapy have been shipped to 28 LMICs covered by the licenses.

Public policies that improve access and affordability

Public policies, including laws and regulations, directly and indirectly affect access and affordability. We are committed to promoting sound policies that drive sustainability of health care systems. We collaborate with governments, industry associations, trade and economic forums, think tanks, academia and advocacy organizations to analyze the impact of current and proposed policies, formulate new proposals, disseminate best practices and promote evidence-based policy solutions at the global, regional and local levels.

We use global and regional platforms such as the G7, G20, the Asia-Pacific Economic Cooperation (APEC), and Americas RISE for Health to advocate for sustainable financing for health care and underscore that investment in health is critical for social and economic development. Additionally, we work at national and local levels to translate commitments, best practices and new ideas into robust policies that improve funding for health and ultimately, access and affordability.

The examples of our work at the global level include advocacy for the G20 to prioritize investment in non-communicable diseases and to promote sustainable and diversified sources of funding and financing. Through a **Think20 event**, the **Health20 Summit**, and in partnership with advocacy organizations such as the **NCD Alliance** and the **G20 and G7 Health and Development Partnership**, we put forward policy recommendations for the G20 working groups and task forces such as those outlined in this T20 **policy brief** and **Roadmap to Sustainable Finance in Health**.

We also collaborated with Devex to organize a **roundtable discussion** on the sidelines of the 2023 Annual Meetings of the International Monetary Fund and World Bank on **advancing cancer prevention and care through** universal health care.

At the regional level, we participated in the Health Financing panel at the launch of Americas RISE for Health to advocate for sufficient, efficient and equitable health investments in the Americas. Through this platform, we promote innovative health-financing mechanisms that harness public and private funding sources and identify enablers and barriers to private health solutions, plus the reforms needed for such solutions to take hold. Additionally, at APEC, we promoted proven and innovative mechanisms for sustainable immunization financing as outlined under the **Action Plan on Vaccination Across the Life-Course**. We supported the APEC Health Working Group's **Recommendations for Collaboration on Cancer Control**, which includes examining the nature and adequacy of public funding for national cancer control plans, with a view to maximize government funds and identify innovative and alternative funding models. This initiative has helped further discussions with policymakers within the APEC economies.

We also partner with organizations to strengthen the infrastructure needed to improve access to and funding for cancer prevention and care. For example, we are members of the Access to Oncology Medicines (**ATOM**) Coalition, a global initiative with over 40 partners across the private and civil society sectors, to reduce cancer-related suffering and deaths by addressing barriers to availability and affordability, and appropriate use of oncology medicines in LMICs. In partnership with the Union of International Cancer Control and ThinkWell, we supported a master course on **Financing for Universal Health Coverage in the Context of Cancer Control**, aimed at upskilling civil society organizations, including representatives of cancer societies and patient groups, and those engaged in cancer policy work and research.

We also support research on strengthening the economic case for investing in immunization. For example, we collaborated with the Global Coalition on Aging (**GCOA**) to develop a report on The Role of Healthy Aging and Adult Immunization in Achieving Fiscal Sustainability and Economic Growth across the APEC region.

To achieve sustainable access, health care resources must be used in a more efficient and equitable way. This transformation can only be achieved by learning and progressing together with cross-industry partners. We are contributing to the **Global Innovation Hub Expert Review Committee** as an advisor to the group. Through our efforts to assist and learn from health care systems that have embraced value-based care, we aim to inspire and encourage other systems to adopt and implement strategies and models that prioritize health care value.

Donating medicines and vaccines when and where needed

When market-based solutions are inadequate or unavailable, we pursue programs to provide direct access to our medicines and vaccines, including product donations and patient assistance programs. In 2023, we reached over 385 million people with product donations through the MECTIZAN Donation Program, the U.S. Patient Assistance Program, and the Merck Medical Outreach Program (MMOP) for disaster relief and humanitarian aid.

The U.S. Patient Assistance Program

The U.S. Patient Assistance Program provides certain medicines and adult vaccines free of charge to eligible individuals who do not have prescription drug or health insurance coverage. This is consistent with our long-held values and tradition of putting patients first.

Product donations	2019	2020	2021	2022	**2023**
Product donations through U.S. Patient Assistance Program (U.S. dollars in millions)[1]	$1,460	$1,603	$1,455	$1,685	**$1,570**
Product donations for ex-U.S. programs and U.S. disaster relief (U.S. dollars in millions)[2,3,4]	$1,550	$1,280	$284	$97	**$483**

[1] Year-to-year changes are due to changes in covered product offerings (additions and removals) coupled with health care and business changes (e.g., COVID-19 pandemic and Organon & Co. product transitions impacted 2021 volumes significantly; 2023 reflects additional removed products from programs due to several product deletions from the U.S. market).

[2] In 2021, we stopped reporting on the market value of donated MECTIZAN, leading in large part to a decrease in our overall reporting of the value of product donations for ex-U.S. programs.

[3] Includes our Medical Outreach Program (including U.S. disaster relief), the MECTIZAN Donation Program and Merck division and subsidiary donations.

[4] In 2022, the products donated through MMOP to our NGO partners were valued at $66.2 million in support of the Ukraine crisis specifically and another $26.9 million were donated to other countries outside of the U.S. via our MMOP partnering NGOs.

People reached through donation programs	2019	2020	2021	2022	**2023**
Total estimated number of people reached through product donation programs (millions) (including MECTIZAN)[1]	403.7	268.3	197.3	359.2	**385.2**
Estimated number of people reached through the MECTIZAN Donation Program (millions)[1]	403.0	267.8	197.0	358.9	**385.0**
Patients utilizing our U.S. Patient Assistance Program (millions)[2]	0.239	0.190	0.130	0.113	**0.129**
Estimated number of people reached through the MMOP (millions)[3,4]	0.458	0.283	0.139	0.119	**0.042**

[1] "People reached" is defined as people who received a medicine or vaccine through the MECTIZAN Donation Program, U.S. Patient Assistance Program, or the MMOP. Estimated figures assume all product reached patients, and are based on converting volume of medicines and vaccines donated. This estimate calculates the number of people who accessed the treatment and is therefore a sub-set of treatments approved.

[2] Totals represent 2019–2023 volumes of our U.S. Patient Assistance Program. Volumes vary across years based on changes in covered product offerings and changes across the health care landscape. Volumes in 2021 reflect a decline as a result of products transitioned to Organon & Co. in the 2021 spin-off.

[3] Estimated figures, which assume all product reached patients, are based on converting volume of medicines and vaccines donated. Conversion factors for this estimate were developed using a combination of IQVIA SMART Data and U.S. product information found on our product website.

[4] Decline in patients reached in 2021 and 2022 relative to 2020 and prior years is primarily due to the decreased availability of certain products offered for donation because they moved to Organon in the 2021 spin-off, and global needs changed. In 2023, the decline in patients reached compared to 2022 can be attributed to the higher average dose per patient annually of the products donated for chronic diseases.

The MECTIZAN Donation Program

The MECTIZAN Donation Program is the longest-running drug donation program for neglected tropical diseases. We have committed to providing as much MECTIZAN as needed for as long as it's needed to treat river blindness through the MECTIZAN Donation Program globally.

Our donation commitment has expanded over the years to include the treatment of lymphatic filariasis. Since the program's inception, we have donated over 4.6 billion MECTIZAN treatments and have made significant impacts on health systems in some of the hardest-to-reach communities around the world. The MECTIZAN Donation Program is one of the most successful public-private health partnerships of its kind.

*For more information, please see the **MECTIZAN story** on our corporate website, and the **MECTIZAN Donation Program** website.*

In 2023, we reached over

385 million

people with our MECTIZAN donations.

Disaster relief and humanitarian assistance

We are committed to supporting global communities affected by natural disasters and humanitarian crises. We look to local authorities and humanitarian relief agencies to first assess need, and then to respond in a timely, coordinated manner. To meet immediate needs, we provide aid through financial and product donations.

2023 was a significant year for natural disasters driven by climate change and human conflict. In response to these events, we donated essential products, and joined global and regional actors to provide immediate emergency response, rebuild damaged health systems, and strengthen long-term disaster preparedness and response capacity.

Our MMOP is the primary way we donate our medicines and vaccines for global disaster relief and humanitarian assistance in LMICs. In 2023, we reached an estimated 42,000 people through the MMOP. The MMOP expands access to our products, particularly in LMICs, by donating medicines and vaccines to a limited number of qualified, U.S.-based NGO partners. The scope and reach of the MMOP varies from year to year and is influenced by changing medical needs in LMICs, the quantity of our medicines available for donation and the unpredictable nature of emergencies or disasters.

Strengthening health systems and addressing inequity

Our focus on strengthening health systems and addressing inequities in access to health aligns with our deepest-held values. We strive to reduce barriers for populations underserved by health care globally. We believe that by working closely with governments, donors, patient groups, health care professionals, non-profit organizations, academic institutions, multilateral organizations and private enterprises, we can build stronger health systems that provide better and more equitable care.

>54 million

People reached with our social investments to address health equity (2021-2023), including 21 million people in 2023 alone

$44 million

In social investments to address health equity in 2023

GRI/SASB disclosures in this section:

GRI 203 SASB 240a.1

*For more info on disclosures, see the **Reporting indices**.*

Health Equity Goal (in millions)	2023	TOTAL
Further advance health equity by reaching 50 million people in LMICs and people underserved by health care in high-income countries with our social investments, by 2025.[1,2]	**21.2**	**54.8**

[1] Social investments include our Company's philanthropic partnerships, programs and impact investments. "Underserved populations" are defined as those that face health disparities due to disadvantages related to insurance status, social determinants of health, race, ethnicity, gender identity/sexual orientation, age and/or language preference. The goal is cumulative across the reporting period of 2021-2025 and is independent of a baseline period. Actuals for each year to date are based on reports received between the 1st of March and the last day of February of the corresponding performance year.

[2] Third-party reporting is used to calculate the number of people reached through social investments. In some cases, third-party reports may include cumulative people reached for the reporting period, and/or data that are attributable to other partners as well as our Company's philanthropic investment.

Our approach to strengthening health systems and addressing inequity

In 2023, we provided $44 million in social investments to address health equity through philanthropy, strategic collaborations and impact investing. Our investments help advance health equity around the world by addressing the barriers that many individuals face in seeking and receiving high-quality health care.

Our 2023 investments reached more than 21 million people in LMICs and underserved populations in high-income countries. That brings our three-year total (2021-2023) of people reached to more than 54 million, exceeding our goal to reach more than 50 million people by 2025. We also track health care workers trained through the initiatives we support. In 2023, our partners trained an estimated 349,000 workers—extending our impact for years to come.

Our social investments are guided and reviewed by expert advisory bodies, including an internal Impact Investing Council; an internal Economic Inclusion, Workforce Development and Health Equity Council; and external advisory committees for the MECTIZAN Donation Program and Merck for Mothers.

Addressing barriers to health	2019	2020	2021	2022	**2023**	**Total**
Further advance health equity by reaching more than 50 million people in LMICs and populations underserved by health care in high-income countries with our social investments, by 2025. (In millions.)[1,2]	N/A	N/A	15.0	18.6	**21.2**	**54.8**
Annual investment in partnerships, programs and impact investments that support health care capacity building and address underlying barriers to access to health (in millions)[3]	$63	$49	$36	$38	**$44**	—
Number of health care workers trained through major partnerships, programs and impact investments (estimated in millions)[4]	0.068	0.078	0.099	0.316	**0.349**	—

[1] Social investments include our Company's philanthropic partnerships, programs and impact investments. "Underserved populations" are defined as those that face health disparities due to disadvantages related to insurance status, social determinants of health, race, ethnicity, gender identity/sexual orientation, age and/or language preference. The goal is cumulative across the reporting period of 2021-2025 and is independent of a baseline period. Actuals for each year to date are based on reports received between 1st of March and the last day of February of the corresponding performance year.

[2] Third-party reporting is used to calculate the number of people reached through our social investments. In some cases, third-party reports may include cumulative people reached for the reporting period, and/or data that are attributable to other partners as well as our Company's philanthropic investment.

[3] Represents investments made by our Office of Social Business Innovation. Starting in 2023, this number also includes cash giving for disaster relief.

[4] Increase in 2022 driven by Merck for Mothers training programs scaled through digital delivery and with integration into national training campaigns.

Philanthropy, health equity and community engagement

Our approach to philanthropic investments is guided by these key principles:

- Meeting critical global health needs
- Promoting health equity by helping to reduce health disparities in underserved communities
- Collaborating with diverse partners across sectors to build healthier, stronger communities
- Using our range of resources (financial, product and expertise) to improve access to health

Established in 1957, **our Foundation** is funded entirely by our Company and is our chief source of financial support for qualified, eligible non-profit organizations whose programs align with our philanthropic priorities. Since its inception, our Foundation has supported innovative programs and partnerships to improve the health and well-being of people around the world. Building on the successes of its **multi-year efforts** to improve access to high-quality, equitable care for people living with cancer, the Foundation established a new U.S.-based initiative—the **Alliance for Equity in Cancer Care (the Alliance)**. The Alliance is addressing persistent cancer disparities by helping improve the delivery of high-quality and culturally responsive care in underserved communities across the country. With a $20 million commitment over five years (2022-2026), the Foundation is supporting the design and implementation of innovative, comprehensive programs that help improve patient outcomes by meeting individuals' medical and social needs.

The Foundation also supports programs that improve the delivery of cancer care in LMICs. Through an $11 million commitment over six years (2023-2028) to University of New Mexico (UNM) Health, the Foundation is supporting **Project ECHO**®, a global movement to democratize knowledge and expand access to best-practice care. With our support, Project ECHO's teams are training and mentoring more than 33,000 local health workers and bringing high-quality care to an estimated 11 million people living with cancer in underserved communities across India, Indonesia, Malaysia and Vietnam.

We extended our health equity efforts and supported social investments globally that delivered health communications campaigns, strengthened digital platforms and supported vaccination programs in underserved communities. Considering the unique care barriers impacting rural communities, we are also partnering with community-based coalitions to address social determinants of health in more than 60 counties across Indiana and Georgia. These grassroots coalitions are comprised of public health stakeholders, community engagement groups and business leaders providing education and awareness in rural communities, as well as accelerating vaccination equity by addressing social barriers to services.

Our success depends largely on our relationships and interactions with local communities, including patients, community leaders, non-profit organizations, local businesses, schools, elected officials and local media. The communities where we operate are home not only to our customers, but also to our workforce and many of our suppliers. It is critical we understand their concerns and needs, and that we address local challenges to build stronger communities and support the sustainability of our business.

We contribute to the economy of local communities directly and indirectly through employment, training, support of local suppliers, local R&D and by paying taxes. We also strive to have a positive impact on communities by helping to protect the environment, maintaining safe operations and respecting human rights. Our community engagement programs strengthen communities where our employees live and work by addressing critical health and social needs.

Solutions for Healthy Communities (SHC)—formerly known as the Neighbor of Choice program—catalyzes community innovations that facilitate access to quality health care for underserved populations. SHC provides multi-year grants to NGOs addressing barriers to heath care in the communities where we operate.

*For more information on these programs, please visit the **Philanthropy page** on our corporate website.*

Making pregnancy and childbirth safer

Maternal health outcomes highlight the strength of a health system. In many countries, unacceptable and inequitable access to care around pregnancy and childbirth lead to devastating impacts for families. Merck for Mothers is our $650 million global initiative to create a world where no woman has to die while giving life. For a decade and counting, we have brought our Company's scientific and business expertise to help carve a path to a better world where maternal health outcomes are improved by increased access to safe, high-quality, equitable, and respectful care around pregnancy and childbirth.

Since inception through 2023, our Merck for Mothers initiative has **reached more than 30 million women** with programs to improve maternal health outcomes, surpassing a commitment to reach at least 25 million women by 2025. This includes expanding access to high-quality maternal care for more than 18 million women over the past three years, as part of our goal to reach more than 50 million people underserved by health care, by 2025.

Our efforts bring fresh thinking and infuse new approaches to end the longstanding challenge of maternal mortality. With our grantees and collaborators, we are improving health systems for women by advancing quality standards, catalyzing solutions that respond to community needs, and harnessing private-sector innovations for maternal health. For example, in 2023, we supported the development of a global roadmap to address postpartum hemorrhage, or severe bleeding after childbirth, the leading cause of maternal death in LMICs. We also partnered with the American Heart Association to address racial disparities in maternal health outcomes linked to cardiovascular health in pregnancy.

*For more information, please visit the **Merck for Mothers** website.*

Addressing cancer disparities

In addition to the philanthropic investments mentioned earlier in this section, we are building a range of partnerships to strengthen cancer prevention, care and support systems to help improve health equity in underserved communities. In the U.S., we have supported the American Cancer Society's *Get Screened* campaign, aimed at reducing disparities in cancer screening that were exacerbated by COVID-19.

Through the CEO Roundtable on Cancer, we support Historically Black Colleges and Universities (HBCUs) and Hispanic-Serving Institutions (HSIs) in "Going for Gold" to help improve health equity, education, navigation and access in communities disproportionately affected by cancer.

Globally, we collaborate with the **City Cancer Challenge Foundation** (C/Can) to improve equitable access to quality cancer care in 15 cities around the world by strengthening patient navigation, care coordination and data capacity through the integration of digital platforms in health systems. Together with C/Can, we joined the **Global Breast Cancer Initiative (GBCI)**, which aims to save 2.5 million lives over a 20-year period. As members of the Access To Oncology Medicines **(ATOM) coalition**, we work together with over 40 partners across private and civil society sectors to address barriers to availability, affordability and appropriate use of oncology medicines in low and lower-middle income countries. Through our partnership with **Go Further**, an initiative that aims to reduce new cervical cancer cases among women living with HIV in 12 African countries with some of the highest rates of HIV prevalence and cervical cancer incidence in the world. We are supporting an independent, investigator-initiated study of the use of our 9-valent HPV vaccine in a cohort of women living with HIV in Eswatini. The study will help determine the appropriate dosing of vaccine for women living with HIV.

Advancing health online

In June 2021, Merck and Meta launched the **Advancing Health Online initiative (AHO)**, a fiscally sponsored project of Global Impact, aimed at advancing public understanding of how social media can be used to better understand and to increase the health and resiliency of communities. AHO has brought together representatives from technology, health, global development and academia to support social media integration as a core component of social behavior changes for improved health outcomes. One of AHO's first steps was to establish the independent Vaccine Confidence Fund to sponsor research on how social media and online platforms can support confidence in and access to COVID-19 vaccines and routine immunizations. The Fund has provided over 40 grants globally to researchers and organizations, exploring how to use behavioral science, social media and digital platforms to build confidence in and access to vaccines.

In 2023, Global Impact—on behalf of AHO and Gavi, the Vaccine Alliance—joined forces to launch VaxSocial, an initiative that supports country-driven projects and uses social media to increase vaccine confidence and awareness, given the increasing role of social media platforms as a conduit for health information. VaxSocial will generate evidence and share insights with the global health community.

Investing for impact

Impact investing is one of our core approaches to strengthen health systems by advancing sustainable global health solutions. Through impact investing, we deploy financial resources in ways that generate not only improved access to health care for underserved populations, but also financial returns and strategic opportunities—all while growing a sustainable global health ecosystem and attracting additional capital and partners.

Impact investing is led by our Office of Social Business Innovation with guidance from our internal Impact Investing Committee. Established in 2019, the Impact Investing Committee is a cross-functional team of senior leaders who review and approve new investments in line with established policies and guidelines. The Committee also monitors the financial and social returns of our impact portfolio. In addition, we are members of several external networks where we contribute to and benefit from the growing body of expertise in impact investing.

For example, we invested in Mamotest, a company in Latin America providing AI-enabled telediagnosis for breast cancer. And in 2023, we invested in AfricInvest's Transform Health Fund, focused on innovative models to improve access, affordability, resilience, and the quality of health care in Africa.

*Learn more about our **impact investments** on our corporate site.*

Employees

Our Company's success is built on a culture that embraces different perspectives and values each individual's contributions. We recognize that a diverse, skilled and engaged workforce strengthens our competitiveness. Our best-in-class talent shares in our mission to save and improve lives. To hire and retain the best people—those who will invent and deliver medicines and vaccines that change the world—we must be an employer of choice.

Fostering an inclusive and supportive culture is fundamental to our talent strategy. Our longstanding commitment to diversity, equity and inclusion (DE&I) is based on our belief that unique, passionate perspectives are critical to innovation and, in turn, provide a competitive advantage. We also foster a positive working environment by providing resources designed to improve the well-being of our employees and their families.

Topics covered in this section:

Global talent management
Diversity, equity and inclusion
Health and safety
Compensation and benefits

>21,000

Employees are members of at least one of our 10 Employee Business Resource Groups—that is almost 30% of our workforce globally.

In 2023, our global pay equity study indicated:

>99% pay equity

In compensation for female employees compared to their male colleagues; in the U.S., we continue to achieve and maintain greater than 99 percent pay equity by race and gender for the third year in a row.

Global talent management

Our focus is to enable every employee to continuously learn and grow, creating a greater connection to the organization and accelerating the development of our talent. We believe our employees are at the center of everything we do. This foundation fuels our efforts to succeed in attracting, developing, retaining and inspiring our employees.

Our current talent management practices include performance management, leadership development, talent assessments and succession planning. Our Global Talent Management team designs and implements enterprise-wide talent management, leadership and functional-learning strategies aligned to our business strategies to retain and attract talent, support and develop a diverse workforce and create a strong succession pipeline. Our talent practices are supported by a human capital management system that enables managers and employees to track priorities, development plans, performance ratings, career aspirations, job experiences, skills, language proficiency, certifications and education.

GRI/SASB disclosures in this section:

GRI 2-7	GRI 2-8	GRI 401	GRI 401-1	GRI 404	GRI 404-1	GRI 404-2
GRI 404-3	SASB 330a.1	SASB 330a.2				

*For more info on disclosures, see the **Reporting indices**.*

Our global approach to talent management

We recognize the importance of hiring, retaining and developing strong leaders. After all, our people are our greatest asset. Teams comprised of employees with diverse thoughts, perspectives and experiences are essential for fostering innovation and creativity and for driving success. With this in mind, we prioritize measures to build a workforce that reflects the diverse world in which we operate.

Talent management is about helping our employees navigate their careers and recognizing each individual's unique journey. Our approach is to establish the foundation for skills development through assessment, leadership, teaming or coaching. Through research, including the voice of the customer and benchmarking research, we aim to create a high-performing culture that gives our people opportunities to contribute to our mission of saving and improving lives.

We have developed a targeted communications strategy to attract a broad and diverse talent pool. This encompasses various channels, including marketing and social media, and alliances with organizations that promote diversity and inclusion.

Investing in our people's growth, success and well-being is a priority within our Strategic Framework and a pillar of our culture. We provide our employees with resources, programs and support to help them achieve their goals and shape their futures. Through forward-thinking approaches, we develop experiences and skills at every level and in every function and division globally. We also strive to increase access to opportunities for career growth.

The primary focus of our learning and development is to enable a diverse and accessible environment for our employees to learn and thrive. We accomplish this by collaborating with business partners across the Company to understand critical business challenges and prioritize solutions. We then design, develop and execute innovative learning experiences to strengthen our workforce, support career growth and development, and drive business impact.

As of December 31, 2023, we had approximately 72,000 employees worldwide. This includes approximately 29,000 employees in the U.S., including Puerto Rico, and approximately 15,000 third-party contractors globally. Third-party contractors include our temporary workers, independent contractors and freelancers who are full-time equivalent employees, but exclude outsourced service providers. Approximately 70,000 employees are full-time.

Transparency and development for all

When it comes to development, our employees are empowered to build careers with a purpose that allows them to leverage their strengths and learn every day. We believe every employee has the potential and desire to learn, grow and succeed. We also understand that employees are unique, with their own skills, aspirations, and development needs.

Our approach is built on the belief that development is for all employees, that employees and managers drive development in partnership, and that employees' development needs, actions, and paths are individual. We remain committed to providing capability-building resources that guide managers and employees to meet throughout the year for an open dialogue about progress and accomplishments against their development needs and priorities.

We emphasize transparency in development conversations and encourage ongoing coaching and future-focused development planning to ensure our employees understand how their skills and contributions align with our goals and where they need to focus their growth.

Leadership as a differentiator

Effective leadership is essential for advancing our culture and powering organizational and individual performance. Leadership skills, in addition to the functional skills of our workforce, position us to succeed today and into the future.

In 2023, we introduced a set of 15 Enterprise Leadership Skills aimed at shaping our future, unleashing potential within ourselves and others, and making a meaningful difference for the patients, customers, and communities we serve. Our goal is to empower all individuals within our organization to embody these essential skills, which are vital for successfully implementing our Strategic Framework in every aspect of our work.

To demonstrate our unwavering commitment to leadership development for all, we provide readily accessible, self-directed learning resources to all colleagues. This empowers individuals to shape their leadership development journey at their own pace. Additionally, we continue introducing leadership learning programs for colleagues at all levels, divisions and geographies, supporting them at pivotal career moments and ensuring that our leadership development initiatives have a lasting and meaningful impact.

Performance management

We're driven by a clear sense of purpose to impact our patients, customers, and communities worldwide positively. We strive to focus our employees on the work that matters and ensure that every employee understands how their priorities and daily work contribute to our broader aspiration, and to create a sense of individual purpose and fulfillment.

Feedback is a cornerstone of our performance management process. We encourage regular, constructive feedback through structured mechanisms that help employees understand their strengths, areas for improvement and progress toward their goals. We strive to equip our people leaders to serve as coaches, mentors and advocates, providing support and guidance to enable employees to succeed.

Finally, performance excellence goes beyond achieving results. Our performance evaluation and rewards process is evolving to provide a balanced assessment of results and behaviors. We recognize that achieving business objectives is essential, and so is the manner in which those results are obtained. That's why we're committed to evaluating and rewarding performance against business results and our Ways of Working.

Managers and employees are encouraged to meet throughout the year to discuss progress and accomplishments against their priorities and actions to enable development. At the end of the year, colleagues summarize their achievements and assess their impact on the organization, their team and their development.

Managers conduct annual performance reviews of employees at all levels (except those subject to collective bargaining agreements) to guide individual decisions regarding development, compensation and rewards. They gather feedback about their employees and write performance reviews, providing holistic feedback on employees' accomplishments.

Performance reviews	2019	2020	2021	2022	**2023**
All employees[1]	94%	95%	95%	96%	**96%**

[1] "All employees" are defined as all active full- and part-time workers only.

Our approach to recruitment and retention

We are focused on recruiting and retaining the best talent globally, those committed to saving and improving lives. Our employees are located worldwide, with about two-thirds of them in the U.S. and Western Europe.

Because of our strategic focus on discovery and invention, we have dedicated Sourcing and Executive Teams that specifically support research and development (R&D), and global branding that calls attention to specific R&D opportunities. Our success largely depends on our ability to attract and retain highly qualified scientific, technical and management personnel, and personnel with expertise in clinical R&D, government regulation and commercialization.

Our hiring strategy focuses on securing digital, analytical and automation skills, as well as sales and marketing skill sets, especially in oncology and vaccines in our Global Human Health and Research divisions.

We have strategically located discovery centers in regions with active biomedical research communities in California and Massachusetts, and principal sites outside the U.S., including in the United Kingdom and China. These centers allow us to recruit talented local scientists and collaborate with local academic institutions and companies. These discovery sites complement and connect with our strong R&D capabilities and expertise at our New Jersey and Pennsylvania sites.

We have made significant progress in providing equal opportunity to the broad diversity of available and qualified candidates through our recruiting. By collaborating with various external partners, we have attracted diverse candidates from various demographics to compete for our jobs.

We have consistently made investments and forged partnerships with multiple diversity hiring programs in the U.S., including for our Skills-First hiring initiative (see page 59). Our continued success lies in our ability to identify, source and attract talent, regardless of gender or other immutable characteristics.

We are committed to investing in the health and well-being of our employees. Our annual **Well-being Report** demonstrates our focus on employee well-being and our commitment to measuring progress, celebrating successes, and constantly raising the bar for our employees and their families. Our well-being framework and a robust suite of benefits and resources focus on our employees' physical, mental, financial and social well-being.

*For details, please see our **Well-being Report** on our corporate website.*

Employees by region (2023)	Number of employees[1]	% of Total
U.S.	28,772	40%
Europe (Western)	19,593	27%
China	6,628	9%
Asia Pacific	6,209	9%
Latin America[2]	4,873	7%
Japan	3,205	4%
Eastern Europe, Middle East and Africa (EEMEA)	2,250	3%
Canada	639	1%

[1] Full-time equivalents reported.

[2] Puerto Rico is included in Latin America.

Employee volunteering

Each year, our employees around the world take an active role in giving back to their communities by donating volunteer hours to help improve health and well-being through a range of volunteer activities.

*See the **Philanthropy page** on our corporate website for examples and more information on our **volunteer programs**, such as our **Fellowship for Global Health** and **legal pro-bono program**.*

We value the retention of our employees and closely monitor turnover rates. In 2023, we saw a reduction in hiring due to a decrease in employee turnover from 11.4 percent in 2022 to 7.8 percent in 2023. We saw a 7 percent reduction in external hires from 2022, primarily driven by low employee resignation rates in the U.S., China and Canada. We had an increase in external hires in Latin America, Japan and Asia Pacific. This was largely due to our continued focus on clinical trials in these regions.

Turnover (global)	2019	2020	2021	2022	2023
Overall turnover rate[1]	9.9%	8.5%	11.1%	11.4%	**7.8%**
Voluntary turnover rate	6.9%	6.0%	8.8%	8.5%	**5.6%**

[1] Includes all types of turnover of regular employees. "Regular employees" are defined as employees who do not have a predetermined end date to employment.

Turnover by division (2023)	Overall turnover rate[1]	Voluntary turnover rate
Animal Health	**8.9%**	**6.1%**
Global Support Functions	**7.0%**	**5.3%**
Global Human Health	**11.3%**	**7.0%**
Manufacturing Division	**7.9%**	**5.8%**
Research Laboratories	**4.6%**	**3.8%**

Note: Global Support Functions include Human Resources, Corporate Compliance, Finance, Legal, Strategy, Business Development and IT.

[1] "Overall turnover rate" includes all types of turnover of regular employees. "Regular employees" are defined as employees who do not have a predetermined end date to employment.

Turnover distribution by gender (2023)	Female	Male
Overall	**47%**	**52%**

Notes: Data above includes all types of turnover of regular employees. "Regular employees" are defined as employees who do not have a predetermined end date to employment. To align with U.S. government reporting requirements, the data for gender diversity in this report use the terms men and women. We recognize and embrace the gender spectrum and diversity in our employees and have internally established voluntary Self-ID options for employees to self-report on their gender identity. Additional 1% is made up of Unknown and nonbinary employees.

Employee hires by region	2019	2020	2021	2022	2023
Asia Pacific (Includes China for 2019 only)					
Number of hires	2,727	597	588	870	**936**
Hire rate[1]	20.8%	8.9%	10.0%	14.6%	**15.1%**
EEMEA[2]					
Number of hires	605	360	373	295	**295**
Hire rate[1]	18.8%	10.7%	13.8%	11.6%	**13.2%**
Latin America					
Number of hires	558	459	496	441	**619**
Hire rate[1]	10.5%	8.4%	10.5%	9.3%	**12.7%**
Europe					
Number of hires	2,624	1,754	1,709	2,024	**2,015**
Hire rate[1]	12.3%	8.4%	9.5%	10.5%	**9.7%**

Employee hires by region	2019	2020	2021	2022	2023
Japan					
Number of hires	121	143	120	137	**178**
Hire rate[1]	3.4%	4.4%	3.8%	4.3%	**5.5%**
U.S.					
Number of hires	2,654	3,193	3,443	3,625	**3,056**
Hire rate[1]	10.5%	11.9%	13.1%	13.3%	**10.5%**
China					
Number of hires	NR[3]	2,149	1,907	1,391	**1,064**
Hire rate[1]	NR[3]	29.5%	31.5%	21.5%	**16.0%**
Canada					
Number of hires	NR[4]	50	73	109	**79**
Hire rate[1]	NR[4]	7.5%	12.8%	18.4%	**11.8%**

NR: Not reported.

Note: Latin America figures include employees in Puerto Rico.

[1] Percentage of new hires in the total onboard head count; regular employees only. “Regular employees” are defined as employees who do not have a predetermined end date to employment.

[2] EEMEA (Eastern Europe, Middle East and Africa).

[3] China figures are included with Asia Pacific for 2019.

[4] Canadian figures are included with Europe for 2019.

Transition assistance

Transition assistance programs may be provided to support separated employees as part of a workforce restructuring. Such benefits are subject to local plans, laws and country guidelines, but may include the following:

- Severance benefits, which may include severance pay based on an employee’s level and years of service
- Outplacement job transition assistance
- Health and wellness benefits for a defined period of time

Our approach to learning and development

Our Global Learning Development (GLD) organization ensures learning opportunities are developed for diverse thought and an enriched, accessible learning experience. We identify the learning needs of our globally diverse employee population through extensive discovery of learner personas, requirements and environments. Our strategy allows us to anticipate, identify, prioritize, design, develop and implement learning solutions that provide growth and development across five moments of an employee's career. These moments include:

- In-role growth
- Career acceleration
- Leader development
- Company and culture
- Mandatory training

GLD understands that employee skills and capabilities must support our aspirations and purpose. As a result, we continuously evaluate our organizational capability needs and retool our learning culture and strategy to support our employees.

Talent, learning and development focus

We prioritize the learning and development of our talent to support our future leader pipeline. Our talent and learning development portfolios include functional learning, mandatory training and leadership development.

Functional learning

Functional learning is a key focus, equipping employees with the skills needed for their roles. Collaborating with employees from diverse functional areas ensures robust learning opportunities, enabling employees to excel and develop capabilities for future roles.

Mandatory training

We require mandatory safety, compliance and quality training to uphold our high standards and ensure the well-being of employees, customers and the wider community.

Training and education[1]	2019	2020	2021	2022	**2023**
Total course completions for all learners (in millions)	5.3	7.2	6.3	5.1	**5.5**
Hours of training for all learners (in millions)[2]	2.7	3.6	3.2	2.5	**2.7**
Average course completions per learner	55	69	51	42	**49**

[1] "All learners" is defined as all active regular and part-time employees, as well as applicable contingent workers.

[2] Based on average of 30 minutes per course.

Leadership development offerings

Business Leadership Program

A global, nomination-based program on advanced business and financial management concepts and cross-functional leadership is in place. Participants experience simulated experiences focused on developing and executing a global strategy through marketing, sales, manufacturing, supply chain and R&D across three different regions (North America, Europe and China), as well as on managing balance sheets, income statements and cash flow. Our Ways of Working were incorporated into the program in 2023, and we resumed in-person delivery for the first time since COVID-19.

Leadership Pathway

The Leadership Pathway is for director-level employees. This offering aims to enable leaders to be change agents who engender inclusion and trust, inspire experimentation, and achieve business outcomes. The pathway creates a space for individuals to understand better who they are as leaders and how to encourage those they lead by investing in the growth, success and well-being of the Company's people. Participants are asked to consider their impact on others and how their leadership shadow creates certain behaviors in others.

Rise

This experiential program was for our executive directors and associate vice presidents. Rise increases our talent pipeline and succession planning for vital roles by focusing on critical leadership capabilities using resources from best-in-class institutions worldwide. The last Rise cohort ended in June 2023.

General Management Acceleration Program (GMAP)

GMAP is an application-based, early-talent development program sponsored by the office of the CEO. The objective is to create a robust acceleration program for talent, providing the right experiences and learning opportunities to meet our future business demands. This two-year, cross-divisional and global rotational program enables participants to increase their business and financial acumen and to develop critical strategic thinking abilities through targeted learning opportunities and leader networking. In 2023, we marked 10 years of the GMAP program, leading up to a redesign of the program in early 2024.

First Line Essentials

This program develops the core, common and critical capabilities our people managers need, regardless of country, region or division. The program recently returned to in-person delivery to support new manager hires and promotions globally. We revamped the 2023 program to include our Talent Growth Framework and Ways of Working.

Coaching programs

Our coaching portfolio offers a number of experiences to support employees at all levels in a range of needs: role transition, skill-building, leadership effectiveness and beyond. Senior leaders can transition into new roles by defining business and professional priorities—in line with our purpose, Ways of Working, and values—and supported by industry, business and leadership experts. Our mid-level and senior leaders have access to a global cadre of coaches with subject-matter expertise spanning industries. The coaching engagements are rooted in sustained behavior change to enhance leadership skills and accelerate employees to high-level roles. Finally, we democratized coaching to include options for all levels. Coaching at our earlier levels enrolls employees in journeys based on extensive research to develop a mindset map and content to unlock their potential.

Affinity-based leadership development offerings

In support of the evolution of our Talent Growth Framework and talent strategy, in 2024 we will move from nomination-based programming (by managers) to self-enrollment (by employees). This allows all employees to play a more significant role in their development and ensures equal development opportunities across our Company. It also reinforces our commitment to DE&I, which remains a key differentiator and priority for us. The following information includes the affinity-based programs for 2023:

Women's Leadership Program

This global program focused on enhancing women's capabilities to recognize and seize strategic career opportunities by developing critical capabilities and confidence while contributing to our business's core objectives. The areas of focus included navigating the organization while maintaining an authentic leadership style, increasing cultural competence, influencing and storytelling, and advancing the ability to recognize and manage gender differences and subtle micro-inequities by leading through courageous action.

Diverse Leader Program

Merck's Diverse Leader Program (DLP) was an interactive leadership program designed to enable diverse leaders to hone their leadership skills and capabilities. This leadership development experience used a combination of experiential and formal learning focused on:

- Leadership competencies
- Headwinds and challenges unique to diverse, underrepresented talent
- DE&I
- Social identity mapping
- Conflict management
- Giving and receiving feedback
- Strategic networking

Merck Líderes Institute

This six-month program was designed to accelerate the growth and development of Hispanic/Latino leaders. The program equipped participants to drive their careers and create personal and professional success through structured learning and consistent support from managers, sponsors and peers. Participants focused on exploring their identities and cultures, their unique personal and workplace experiences, career and personal development obstacles, and strategies to increase their contributions and personal growth.

Advancing Latino Leadership

This research-based virtual program offered a Latino-specific lens on leadership opportunities and challenges in the corporate sector. It included tailored modules to help participants develop self-awareness, self-empowerment and skill development. The program also provided follow-up discussions with small group work, ongoing meetings with participants' managers and a plan for extended learning beyond the program. Designed around peer-to-peer interactions, the program provided strategies and tips for how, when and with whom to network to support professional advancement.

Diverse Executive Coaching Circles

This program was for executive directors and associate vice presidents from underrepresented ethnic groups. Participants gained valuable insights in various areas of career development, relationship management, strategic thinking and decision making through the benefits of executive coaching. The intent was to support leaders as they ascend by connecting them with advocates and sponsors to further define their career action plans.

FOCUS

This program supported the development of our mid-level Black professionals' leadership capabilities. FOCUS honed in on leadership and brand development and building a peer network. Participants created a values-based leadership philosophy while exploring Black executive themes related to identity and success. Emphasis was placed on giving and receiving feedback, as well as on influence and peer-coaching strategies that support proficiency in leadership competencies.

BOOST

The BOOST program was an application-based LGBTQ+ leadership program. The two-month program provided a rigorous experience focused on building capabilities and enabling participants to apply their unique perspectives and life experiences to their careers. The program also provided aspiring leaders with skills to share their experiences. To further enhance the program, we have recently included our Ways of Working.

Diverse Leader Acceleration Program (DLAP)

DLAP was a 10-month, application-based leadership development experience focused on high-potential Band 300 and 400 employees. The program was designed to provide tools and resources to accelerate the career growth and increase representation of African American/Black, Latino/Hispanic and Native American employees within our U.S. leadership ranks.

The experience focused on honing leadership capabilities aligned to our Enterprise Leadership Skills, empowering strong reporting relationships through manager education, and improving business acumen. Internal senior leaders also served as mentors and sponsors to the participants.

Promotion metrics[1]	2019	2020	2021	2022	**2023**
Men	47%	48%	47%	45%	**45%**
Women	53%	52%	53%	54%	**55%**

[1] Breakdown by gender of all regular employees promoted during the fiscal year. "Regular employees" are defined as employees who do not have a predetermined end date to employment. To align with U.S. government reporting requirements, the Environmental, Social & Governance (ESG) data for gender diversity in this report use the terms men and women. We recognize and embrace the gender spectrum and diversity in our employees and have internally established voluntary Self-ID options for employees to self-report on their gender identity. The totals in this report may not equal 100 percent due to rounding or employees who have identified as nonbinary or unknown gender.

Diversity, equity and inclusion

We recognize the importance of a culture of inclusion and belonging at every level of an organization and are intentional in providing equal opportunities to talent in all areas of our business. A diverse workforce helps us better understand the needs of the customers, health care professionals and patients we serve. A diversity, equity and inclusion (DE&I) mindset is central to our business success and vital to ensuring patients and customers experience positive health outcomes. In addition, through our DE&I efforts, we strive to operate our business with fairness and equality of opportunity for all employees.

Our commitment to the growth, success and well-being of our employees is paramount. We create strategies and programs to benefit employees while advancing a safe and productive culture that embraces inclusion as a competitive advantage. We value our employees for their determination and resilience, as well as their inventiveness, dedication and compassion.

Goals	2023
Maintain or exceed our current inclusion index score by 2025.[1,2]	On track
Maintain or exceed our current employee engagement index score by 2025.[1,2]	On track

[1] In 2022, we revised employee survey measurements to align with evolving best practices. In this report, 2022 data are used as the baseline for future comparison.

[2] The Pulse survey is open to employees globally.

External charters, principles and initiatives that we endorse or that guide our work on this topic:

- CEO Action for Diversity and Inclusion
- Skills-First talent strategy
- Paradigm for Parity
- United Nations Women's Empowerment Principles

GRI/SASB disclosures in this section:

GRI 405	GRI 405-1

*For more info on disclosures, see the **Reporting indices**.*

Our approach to diversity, equity and inclusion

Our commitment to a more globally diverse and inclusive (GD&I) workforce fosters an environment of belonging, engagement, equity and empowerment to ensure patients and customers experience positive health outcomes. Our GD&I strategy incorporates a holistic approach where everyone can contribute to our mission.

To achieve these objectives, we focus our efforts on the following:

- Our People: Strengthen the foundational elements of diversity
- Our Culture: Ensure accountability to drive an inclusive culture
- Our Business: Leverage diversity and inclusion to ensure business value
- Our World: Transform the environment, culture and business landscape

Our enterprise-wide plan includes diversity and inclusion as a vital business priority that drives long-term, sustainable business performance, as well as innovation, collaboration and agility among our employees.

Governance and commitments

Diversity and inclusion are strategic business levers, sponsored at the highest levels of our organization. They also serve as a key dimension of our Ways of Working and Enterprise Leadership Skills. Our Board has a Diversity Policy that reflects the value of diverse membership in driving inclusion, enhancing deliberations, and contributing to their overall effectiveness in representing the long-term interests of our business and shareholders.

Our CEO further reinforces our commitment to DE&I as a strategic business imperative by:

- Approving intentional efforts to ensure equality of opportunity for all
- Driving accountability through meetings with his Executive Team and senior leaders for direct reports, and by engaging employees in reviewing strategic initiatives centered on our GD&I strategy
- Conferring with our chief HR officer and chief diversity and inclusion officer on innovation opportunities and business solutions

GD&I ambassador teams

Our GD&I Center of Excellence (GD&I CoE) provides comprehensive, practical guidance and support for five GD&I ambassador teams that integrate DE&I into our business and people strategies. These ambassador teams meet regularly to share challenges and best practices, to provide the chief diversity and inclusion officer updates on priorities, and to align with our GD&I strategy. These ambassador teams represent the work of the many DE&I councils, Employee Business Resource Group (EBRG) chapters, communities of practice, and other groups throughout the Company that are focused on building a culture of inclusion and belonging for employees and on advancing health equity for the patients and communities we serve.

The Global Disability Inclusion Strategy Council

Our Global Disability Inclusion Strategy Council supports a disability-inclusive culture. The council offers guidance on initiatives to advance a disability-confident workforce, including universal design, digital accessibility, hiring of people with disabilities, communication and supplier diversity. It also reflects our appreciation of how full inclusion of people with disabilities increases creativity, innovation and productivity for employees, customers, external partners and suppliers.

The Global Diversity and Inclusion Extended Human Resources Leadership Team

This team of HR colleagues from across the business facilitates the successful integration of diversity and inclusion capabilities into our practices, programs, policies and systems. A key outcome is a more diverse, equitable and inclusive culture—one that attracts, engages, develops, motivates and retains talent globally.

Employee Business Resource Group Executive Leadership Council

The EBRG Executive Leadership Council is comprised of the global leaders of each of our 10 EBRGs and represents over 21,000 EBRG members worldwide. Embodying our commitment to different constituencies and to enhancing communication and belonging, the EBRGs strengthen and diversify our leadership pipeline while providing culturally relevant insights and sensitivities that help drive our success and add value to our business.

Global Diversity, Equity & Inclusion Business Consortium

The Global DE&I Business Consortium draws from a diverse group of internal stakeholders. The consortium improves our performance by integrating DE&I principles and strategies into our business processes and objectives. This creates a competitive business advantage that we believe drives greater shareholder value. Selected from key business functions, consortium members develop holistic and inclusive approaches to eliminate barriers and obstacles that patients and customers encounter in their pursuit of optimal health outcomes. Consortium priority areas include: diversity in clinical trials, health literacy, business diversity & economic inclusion, DE&I integration into real-world evidence, and health equity commercialization strategy.

*For additional information on diversity in clinical trials, see page **27**. For additional information on business diversity & economic inclusion, see page **119**.*

Diversity, Equity and Inclusion Divisional/Regional Council Steering Committee

This committee is comprised of chairpersons of the senior-level divisional and regional DE&I Councils. The divisional and regional DE&I councils develop activities and initiatives to integrate DE&I into their organizations across our four GD&I strategy pillars of people, culture, business and world. The steering committee meets several times a year to share best practices, collaborate on activities, and ensure their respective DE&I councils are aligned with the enterprise GD&I strategy.

Working in an inclusive workplace

We provide services for people leaders and employees that support a culture of inclusion and belonging. Our employee Pulse survey, where employees provide candid feedback on topics such as engagement, work practices, inclusion and our mission. These surveys integrate employee input into our decision-making processes across the organization. In 2023, 80 percent of respondents felt a sense of belonging and 87 percent of respondents felt their people leader actively supported diversity and inclusion in their work group.

Our commitment to inclusion is a decades-long practice of understanding, measuring and acting to sustain high employee engagement. We listen deeply to our employees to aid our decision making. Many of our EBRGs host listening forums to foster authentic conversations in a safe environment.

We value the contributions our 10 EBRGs make to our inclusive culture and our business priorities. In 2023, we developed processes and structures to support the growth of our EBRGs, and we ended 2023 with 290 EBRG chapters and more than 21,000 EBRG members around the world.

We remain committed to maintaining or exceeding our current employee engagement index through 2025, as measured through Pulse surveys conducted multiple times a year.

Employee retention and people leader capability

The past year reflects our ability to attract and retain highly qualified people while strengthening our competitiveness and improving the diversity of our employee population. Through our ongoing outreach efforts and partnerships, we attract and acquire a talent pool that reflects the diversity of the communities and patients we serve.

We aim to create even more opportunities for our employees by elevating our talent practices to overcome barriers to inclusion. This includes training our people leaders on strategies to mitigate risks associated with unconscious bias.

Allyship

In 2023, our allyship efforts expanded with sponsorship from the vice president of Global Diversity and Inclusion Center of Excellence and the chief of staff to the chairman and CEO. Our Ally Resource Center grew to an internal library of over 170 resources from each of the 10 EBRGs. We launched a Global Ally Working Group, representing DE&I champions from across divisions, geographies and EBRGs. Hundreds of people attended our second webcast on allyship in the workplace. We also nearly doubled the number of Ally ambassadors this year, expanding our business integration.

Opportunities for people with disabilities

We are committed to a culture of inclusion and belonging for people with disabilities, and to ensuring our employees have equitable opportunities. One example of our disability inclusion work is our global digital accessibility policy, seeking to advance equal access across our digital landscape—for our internal workforce as well as external patients and consumers. We have a multi-year roadmap for planning, building and sustaining digital accessibility. Designing for accessibility, usability and inclusion goes beyond the Americans With Disabilities Act. We created a universal design standard for our global facilities to improve accessibility for our employees and guests. Increasing accessibility, both in digital and physical spaces, helps support a culture of inclusion and belonging.

Leadership development

As part of our strategy to drive business results and advance our purpose, we are committed to leadership development to support equity and inclusion for our employees across all dimensions of diversity, whether visible or not. In 2023, we introduced our Enterprise Leadership Skills, a set of 15 clear, consistent and Company-wide skills for all employees. Augmenting the functional skills for each individual role, the Enterprise Leadership Skills help us achieve our desired business outcomes (Our Strategic Priorities) and behaviors (Ways of Working & Values).

DE&I and Emotional Intelligence are two of the 15 leadership skills. DE&I and Emotional Intelligence are how we do what we do, as much as they are what we do. In essence, we lead together. And when we lead together, we are best able to fulfill Our Purpose of saving and improving lives around the world. Our Enterprise Leadership Skills help us ensure a culture of DE&I to benefit all employees, patients and customers.

Expanding our talent pipeline

We focus on removing barriers that may limit the employee candidate pool, and working with partners to expand our reach to potential employees. Through our outreach efforts, we strive to attract and recruit a diverse talent pool that reflects the communities we serve. Our EBRGs play an important role in attracting and retaining talent through recruitment and community engagement activities.

We have key partnerships to reach talent such as:

- Best Buddies
- Disability:IN
- Prospanica
- INROADS College Links
- Lesbians Who Tech
- National Society of Black Engineers (NSBE)
- Latino Corporate Directors Association
- Society of Women Engineers (SWE)

Skills-First talent strategy

Skills-First is a paradigm shift that changes how we attract, develop and advance talent. For appropriate roles, the approach focuses on skills instead of a four-year degree, creating equitable access to meaningful career opportunities for all, including diverse candidates.

In 2023, we posted over 900 roles without a four-year degree requirement (Skills-First opportunities). Of the employees hired for those roles, ~41 percent had less than a four-year degree and ~41 percent identified as a member of an underrepresented group. In 2023, the total U.S. headcount of employees hired through Skills-First opportunities was approximately 2,400 employees, a 14 percent increase from 2022.

Key partners in our Skills-First efforts include:

- OneTen, a coalition of leading companies closing the opportunity gap for Black talent and others in the U.S.
- Year Up, a non-profit that offers economically disadvantaged youth six months of training followed by a six-month corporate internship
- Interapt and OpenClassrooms, organizations that administer Department of Labor-Certified apprenticeship programs (Skills-First apprentices)

We were proud to host 82 Year Up interns and 14 Skills-First apprentices in 2023, with plans to expand these partnerships for 2024. We placed Year Up interns and Skills-First apprentices in high-impact roles, including digital marketing, data analytics, information technology and project management. Approximately one-third of Year Up and Skills-First apprentice talent converted to full-time or contractor roles in 2023.

Minorities in Agriculture, Natural Resources and Related Sciences (MANRRS)

In an effort to increase diversity in our talent pool for our Animal Health division, we partner with MANRRS to support the recruitment of diverse talent from the agricultural sciences and related fields. The goal is to expose them to the variety of career paths available in the animal health industry, in addition to the veterinary field. The growing areas of connected technology and other smart data products and services for animal health and well-being—where we are a global leader—are examples of career paths available to today's talent.

Future Talent Rotational Program (FTRP)

This 15-month rotational experience in our Animal Health division is open to undergraduate students in select universities. It includes rotations in three different functional areas to expose students to various career opportunities. The goal is to transition about 50 percent of participants to full-time positions, creating a diverse pipeline of future talent.

Using partnerships to expand our impact

The GD&I CoE develops partnerships with external organizations to extend our expertise and ensure we are on the leading edge of DE&I research. These partnerships expand our DE&I knowledge, provide opportunities for thought leadership, connect us with diverse talent, influence the business landscape, and build employee DE&I and leadership capabilities.

These partnerships provide subject-matter expertise across diversity dimensions including race, ethnicity, faith, disability, veteran status, sexual orientation, multi-generation workforce, gender and gender identity. While some of these partnerships are tailored to the needs and challenges of specific groups, they are open to all.

In addition, through conferences, webinars, professional development programs and other vehicles, these partnerships support GD&I strategic priorities. For example, in 2023, the Women's Network EBRG collaborated with the Healthcare Businesswomen's Association to launch the professional development Ambassador Program to accelerate the advancement and visibility of participating talent.

Our work extends to communities globally, including those that have historically been underserved or underfunded.

GD&I partner organizations include:

- Ascend
- Catalyst
- Gartner
- Paradigm for Parity
- Seramount
- Out & Equal
- Tanenbaum

Gender and ethnicity

We recognize talent acquisition practices are pivotal to sourcing and acquiring diverse talent. Our talent acquisition efforts use a cutting-edge technology platform to scan the language in job postings and to highlight suggested changes to ensure our job descriptions are gender neutral and inclusive. This is in addition to a careful review of job postings to ensure there is no biased language.

Gender and ethnicity	2019	2020	2021	2022	**2023**
Women in the workforce	49%	50%	50%	50%	**51%**
Women on the Board[1]	46%	46%	43%	46%	**50%**
Women in executive roles[2]	20%	33%	33%	23%	**23%**
Women in senior management roles[3]	30%	31%	36%	34%	**37%**
Women in management roles[4]	42%	42%	44%	45%	**46%**
Members of underrepresented ethnic groups on the Board[1]	23%	31%	21%	15%	**17%**
Members of underrepresented ethnic groups in executive roles (U.S.)[2]	40%	25%	42%	39%	**39%**
Members of underrepresented ethnic groups in senior management roles (U.S.)[3]	21%	20%	25%	28%	**26%**
Members of underrepresented ethnic groups in the workforce (U.S.)	29%	30%	32%	34%	**35%**
Members of underrepresented ethnic groups in management roles (U.S.)[4]	23%	25%	26%	27%	**29%**
New hires that were female	51%	50%	53%	52%	**53%**
Promotions that were female	53%	52%	53%	54%	**55%**
New hires that were members of underrepresented ethnic groups (U.S.)	35%	40%	46%	47%	**47%**
Promotions that were members of underrepresented ethnic groups (U.S.)	30%	32%	34%	37%	**37%**

Note: We have publicly disclosed Equal Employment Opportunity Employer Information Report (EEO-1) information since 1999. Our 2023 data are available on the **Sustainability Resources page** of our corporate website. To align with U.S. government reporting requirements, the data for gender diversity in this report use the terms men and women. We recognize and embrace the gender spectrum and diversity in our employees and have internally established voluntary Self-ID options for employees to self-report on their gender identity.

[1] Data for Board members are derived from our proxy statements filed the following year.

[2] "Executive" is defined as the Company's executive team listed on our corporate website.

[3] "Senior management role" is defined as an individual holding either a Vice President or Senior Vice President title.

[4] "Management role" is defined as all managers with direct reports other than Executives.

Underrepresented ethnic group representation, by ethnicity (U.S.) (2023)	Total	Black/ African American	Latino/ Hispanic	Asian	All other
Board[1]	**17%**	**17%**	**0%**	**0%**	**0%**
Executives[2]	**39%**	**23%**	**0%**	**15%**	**0%**
Senior management[3]	**26%**	**8%**	**5%**	**12%**	**1%**
All managers[4]	**29%**	**6%**	**6%**	**15%**	**2%**
All employees	**35%**	**9%**	**7%**	**18%**	**2%**
New hires	**47%**	**13%**	**8%**	**23%**	**3%**
Promotions	**37%**	**9%**	**6%**	**20%**	**2%**

Note: We have publicly disclosed Equal Employment Opportunity Employer Information Report (EEO-1) information since 1999. Our 2023 data are available on the **Sustainability Resources page** of our corporate website. To align with U.S. government reporting requirements, the data for gender diversity in this report use the terms men and women. We recognize and embrace the gender spectrum and diversity in our employees and have internally established voluntary Self-ID options for employees to self-report on their gender identity.

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[3] "Senior management" is defined as an individual holding either a Vice President or Senior Vice President title.

[4] "Managers" is defined as all managers with direct reports other than Executives.

Pay equity

We have a longstanding commitment to fair and equitable pay for all employees doing similar work. This commitment is consistent with our core values of integrity, fairness and treating all people with dignity and respect. Having the right culture, systems and practices for talent recruitment and development are critical in driving our ability to compete in global markets where talent is increasingly scarce and diverse. Diversity, equity and inclusion are among our ethical and strategic imperatives.

Pay equity is a critical principle at our Company. We maintain a Pay Equity Council that is deeply engaged in our pay equity initiatives. The Pay Equity Council is jointly led by our vice president of Global Diversity and Inclusion (GD&I) Center of Excellence and senior vice president of Global Rewards & HR Operations. Among its members are leaders within our GD&I, Compensation and Benefits, Talent Acquisition and Employment Legal organizations.

Our efforts toward pay equity include:

- Establishing clear, transparent pay practices and policies to ensure we are paying our employees equitably across all genders, races and ethnicities
- Basing compensation on job-related factors such as the nature of the job, work location and employees' relative skills and work experience
- Training our people managers on our diversity, equity and inclusion policies to ensure decisions regarding employees, including those related to compensation, are based on legitimate job-related criteria and not personal characteristics such as gender, race or ethnicity
- Affirming our commitment to fair and equitable pay by encouraging dialogue between people managers and employees to address pay-related questions and concerns

As part of our commitment to increase transparency and visibility into our pay equity efforts, we equip our leaders with pay equity resources and engage with employees around the globe.

With the support of external experts and legal partners, we conduct annual pay equity studies in the U.S. and abroad. The pay equity studies take into account job-related factors as described above, and allow us to identify whether any adjustments to compensation are needed to ensure we continue to pay our employees equitably. Where appropriate, based on the determinations of our pay equity studies, we make base salary adjustments.

In 2023, our global pay equity study encompassed over 65,000 employees. The results indicated that we compensate female colleagues greater than 99 percent of what male colleagues are paid across the globe. In the U.S., we continue to achieve and maintain—for the third year in a row—greater than 99 percent pay equity by race and gender.

Our focus on pay equity furthers our goal of being the employer of choice for workers of diverse backgrounds, and it supports our efforts to attract and retain the best talent and reward performance consistent with our Leadership Standards. These are clear business imperatives for our Company, to which we remain firmly committed.

*See our **Diversity, Equity & Inclusion page** on our corporate website for more information on our commitments to pay equity and gender equality.*

Health and safety

As a global health care company, we prioritize health and safety in our workplace. Through our comprehensive environmental, health and safety (EHS) program, we aim to reduce EHS risks to eliminate work-related injuries, illnesses and unplanned events from our operations. Our commitment includes full compliance with relevant safety laws and regulations, and our own internal EHS standards. We continuously strive to achieve EHS performance that sets us apart as a leader in the pharmaceutical industry.

All personnel, including employees, service providers, and Company-managed contractors, must adhere to the requirements of our EHS management system. We ensure compliance through site audits and peer reviews for construction projects.

Each year, we establish internal EHS targets and monitor both leading and lagging safety metrics. To maintain consistency and benchmark our injury rates with other multinational corporations, we use the U.S. Occupational Safety and Health Administration (OSHA) record-keeping criteria to track work-related injuries and illnesses. It is mandatory for all incidents involving our employees to be reported and thoroughly investigated to identify the root cause. We then require corrective and preventative actions to prevent recurrence.

GRI/SASB disclosures in this section:

GRI 403 GRI 403-1 GRI 403-2 GRI 403-3 GRI 403-5 GRI 403-6 GRI 403-9 GRI 403-10

*For more info on disclosures, see the **Reporting indices**.*

Policies:

Respect for Environmental Health and Safety

Our approach to health and safety

We continually strive to maintain a safe and healthy working environment for all employees, contractors and guests. We foster a culture of EHS excellence that is built on integrity, accountability, collaboration, and active employee participation, and we seek to continuously improve our systems, processes and standards in further support of that culture.

In 2023, we completed various initiatives to deliver digital systems, improve data analytics and build EHS capabilities. These projects aimed to optimize safety performance through digital tools, to improve data capabilities for better insights and resource prioritization, strengthen compliance, build safety capabilities, and foster a proactive hazard-identification and -elimination culture.

Our EHS management system includes comprehensive programs to reduce or eliminate EHS risks. These include safe facility design, engineering controls, equipment maintenance procedures and emergency response capabilities. Our EHS system is supported by a strong culture built on visible leadership, active employee engagement, and proactive hazard identification and elimination. Employee Safety Committees at our sites demonstrate active engagement in EHS practices, with workers and management collaborating to proactively address EHS issues.

We continuously improve our EHS program by proactively identifying work-related hazards through hazard identification programs and risk assessment programs. These programs help us identify EHS hazards and allow us to implement controls to eliminate or reduce the risks. We frequently review these risk assessments for accuracy. Additionally, we investigate all EHS incidents, identify root causes, and implement controls to address underlying causes and prevent future incidents.

Process safety

Our process safety program identifies, controls and manages risks associated with the manufacturing of our products. The program applies to any operations subject to process safety regulations, and to our pilot plants, manufacturing operations and utility areas where process hazards may exist. In addition, we have a structured chemical reaction hazard review program for our research laboratories.

In the early stages of product development, we conduct chemical reaction and thermal testing of our intermediate materials and products to identify potential reactivity, fire and explosion hazards, and environmental risks. This testing continues throughout the lifecycle of each product to ensure we understand the process risks and can properly manage them.

Process safety professionals also thoroughly evaluate our operations with comprehensive Process Hazard Analyses (PHA's). These structured reviews happen throughout the process lifecycle. This ensures the effectiveness of our facility design, equipment, operating controls, and maintenance procedures in identifying, evaluating, managing and mitigating process-related hazards.

Non-routine hazardous work

We have developed global safety standards and permit-to-work systems to minimize the potential for serious incidents when working at heights, entering confined spaces or working on or near machinery, piping and electrical systems. Our goal is to create a rigorous and safe approach to risk reduction for non-routine, high-hazard work activities.

Capital projects construction safety

We have a strong construction safety program with a focus on zero harm to people, property and the environment. Our Global Engineering Solutions (GES) group oversees hundreds of contractors and thousands of skilled craft workers on our construction projects worldwide. Safety is integrated into every stage of our construction projects, beginning with the concept and design phases, and is carried through to detailed design, construction and commissioning/qualification. In 2023, our Global Engineering Solutions-Capital Project spent 8.6 million work hours in construction.

Our construction safety program mandates pre-job planning, hazard assessments and daily safety checks. We also conduct peer reviews by bringing together in-house engineers, contractors, EHS construction experts and other partners to conduct thorough safety evaluations and share best practices. In 2023, we completed 67 peer safety reviews on projects.

There continues to be a negative trend in the availability of contractors and craft resources for construction. That means we must manage resource availability issues and varied levels of experience and safety competencies. GES

continues to use a “hyper-care” program to ensure supervision and safety oversight of new contractors, high-risk work scope contractors and less-experienced contractors.

GES also uses a rigorous, third-party prequalification program, Highwire, to evaluate and score contractors and subcontractors. This tool evaluates contractors’ safety programs, safety performance, safety incident rates, experience modifier rate and training verification of craft. GES also reviews any regulatory citations prior to allowing bids on any projects.

Safety for non-Company personnel

Contractors working at our sites are required to follow a prequalification and EHS evaluation process as specified in our Global Contractor Management Standard. They are assigned an internal “contractor liaison” to monitor EHS compliance, perform EHS inspections and evaluations, and ensure they follow their safety compliance plans. Contractors must report and investigate all EHS incidents and near-miss events. They also work with site-based EHS contacts to identify and implement corrective and preventive actions, which are tracked to completion.

Integrated Facilities Management (IFM) partners are globally sourced companies responsible for supporting our facility-related tasks. IFM partners are required to follow our EHS standards and site-specific procedures to monitor compliance activities associated with their scope of services, as well as meet EHS- and Environmental, Social & Governance (ESG)-related performance objectives.

A central governance team manages our IFM partners. The governance process includes dedicated resources to measure, monitor and evaluate partners’ EHS and ESG performance, as well as adherence to our requirements. IFM partners proactively follow a continuous improvement process that establishes specific targets for governance to monitor.

Motor vehicle safety

Our motor vehicle safety program promotes a strong safety culture for our employees who operate vehicles to conduct our business. The program reduces the number and severity of motor vehicle accidents and injuries along with a reduction in driving violations. Our global motor vehicle safety standards and programs, including predictive analytics assessments, help us develop employee-specific defensive driving action plans, and promote safe driving skills and behaviors among our sales and marketing employees, who primarily operate our business-use vehicles.

Emergency response

We prioritize incident prevention through equipment and facility design, operational and maintenance procedures, and employee training. We also maintain emergency preparedness and response capabilities to effectively respond to unplanned incidents. Our emergency response programs safeguard our employees and visitors, the environment, nearby communities and our physical assets. Additionally, we conduct pre-emergency planning for credible emergencies, including process upsets, fires, spills, releases, severe weather events and security-related incidents.

Site-specific emergency response procedures include incident reporting and management, personnel evacuation, and medical and incident response and control. We routinely conduct emergency response drills and train employees in job- and site-specific emergency response duties.

Many of our manufacturing plants have on-site, trained emergency response teams and mobile fire and rescue apparatus that can respond to fires, medical emergencies, technical rescues and spills/releases. These teams often collaborate with community-based emergency responders and may provide off-site assistance when requested.

Loss prevention

We proactively assess and manage the risks associated with fires and natural catastrophes (e.g., hurricanes, floods, windstorms and earthquakes) through our Loss Prevention Program. This program eliminates or reduces the impact of potential loss events through:

- Facility and process designs
- Inspection, prevention and maintenance procedures
- Fire suppression, detection and specialized protection systems
- Emergency response and business continuity programs

We regularly engage renowned external loss prevention engineering service providers to inspect our facility designs and modifications. This helps us maintain a high standard of loss prevention that corresponds to the level of operational risk, monetary value and supply chain importance.

Industrial hygiene

Our industrial hygiene (IH) program ensures employee health and safety during research and manufacturing. Our IH professionals identify chemical, physical and industrial hygiene hazards, as well as potential exposures, and then work to control any identified risks. Based on industry-leading best practices, our IH program reflects a hierarchy of controls that include Prevention, Substitution, Engineering, Administrative and Personal Protective Equipment (PPE).

When designing new processes and facilities, we build safety into our designs by eliminating risks, substituting less hazardous processes or materials, and installing engineering and operational controls. After installation, we monitor the ongoing effectiveness of these controls.

Our priority is to eliminate hazardous materials and processes. If elimination is not possible, we seek less hazardous substitutes and evaluate potential engineering controls to mitigate any remaining risk. If engineering controls are insufficient or not feasible, we establish work practice controls, including the use of PPE.

Biological safety

Our biological safety program protects our employees, customers and communities by identifying, assessing and controlling biosafety and biosecurity risks. The biological safety program is designed to control biological exposures while supporting the research, development and manufacturing of vaccines and medicines for communicable and non-communicable diseases. Our program supports

United Nations (UN) Sustainable Development Goal 3 and aligns with the Global Health Security Agenda (GHSA) and GHSA Biosafety and Biosecurity Action Package.

In 2023, we updated the engineering design standards that govern our biological facility designs. This enabled us to design Biological Safety Level 2 (BSL-2) and BSL-3 facilities for safe research, development and manufacturing of vaccines and therapeutics to combat endemic or emerging infectious diseases like dengue, brucellosis and bovine botulism.

To improve biosafety capabilities, our biosafety professionals conducted a Biocontainment Engineering Workshop to better educate our engineers. The team also deployed an engineering and capital project risk assessment tool and integrated other biosafety tools to improve decisions for new and renovated biological facilities.

In addition, we use a risk assessment program to support our research, development and manufacturing facilities and activities. Through these risk assessments, our biosafety professionals evaluate risks associated with biological materials and establish sustainable risk-control strategies that protect human health, animal health and the environment.

We also partner with our community of public- and private-sector biosafety professionals to educate biorisk professionals and to develop guidelines that protect human and animal health and the environment. In 2023, we supported several initiatives and training courses to build our international biosafety capacity.

Ergonomics

We implemented a program to reduce ergonomic risk in process and equipment design and in the work environment across our organization. Our ergonomic programs encourage employee participation in workplace assessments, risk identification and sustainable engineering controls.

Where engineering controls aren't feasible, we add administrative controls including job rotation, job hazard identification and body mechanics training. In 2023, we updated our Ergonomic Engineering Design Standard to ensure the requirements are incorporated into all projects. Of note, the standards establish a review process that incorporates an Engineering Design Checklist with Manual Material Handling Review.

Our remote worker ergonomic assessment process and work-from-home furniture policy continue to prove successful in eliminating injuries and encouraging good working habits. This policy provides hybrid and remote workers resources that guide proper home office workstation setup and identify appropriate furniture and equipment to maintain a healthy work-from-home environment.

Occupational health services

Occupational health principles apply to all employees and directly supervised contingent workers. We promote compliance with both the letter and the spirit of applicable occupational health laws, as well as with our policies and requirements. In many instances, our occupational health guidelines are more stringent than applicable regulatory requirements. We also prioritize continuous improvement and assess our occupational health improvements objectively through internal measurement, external benchmarking and by incorporating best practices.

To meet our occupational health objectives, we focus on seven key areas:

- Global employee health governance
- Prevention and risk minimization
- Quality assurance
- Global standards and communication
- Education and training
- Role of management
- Collaboration with EHS

Global employee health governance

Our chief human resources officer is the senior official who advises our Executive Team on occupational health strategies, policies and programs. Together, our chief HR officer, senior vice president of compensation and benefits, and vice president of Global Safety and Environment collaborate on occupational health and safety matters. They are the executive sponsors of the program.

Prevention and risk minimization

The best way to maintain our employees' health in the workplace is to reduce risk and prevent illnesses and injuries. Occupational Health Services collaborates closely with our EHS organization to identify and evaluate potential health risks. We also take proactive steps to prevent injury and illness through our medical surveillance programs.

Our medical surveillance programs evaluate workplace hazards and implement procedures and clinical protocols to both eliminate hazards and prevent future occurrences. In the event of an occupational injury or illness, occupational health services, along with the EHS organization, provide follow-up investigations and conduct analyses to further reduce avoidable risks.

When employees are ill or injured at work or through personal circumstances, we support their recovery so they can return to work healthy, including facilitating appropriate treatment and rehabilitation.

Quality assurance

Our quality assurance program ensures our occupational health staff and vendors are compliant with our occupational health policies and procedures.

Global standards and communication

We continuously improve our occupational health programs. We adapt programs, policies and procedures based on changing workplace hazards and align our occupational health performance with our Company's objectives.

In addition, we promote our programs, procedures and policies to further support our respect for the health of our employees. We foster openness and respectful dialogue with our employees, anticipating and responding to concerns about our operations.

Education and training

We help provide appropriate EHS education and training programs for our employees so they understand potential health hazards and the precautions to follow for their job duties. We also invest in our certified occupational health team's professional growth to foster business excellence.

Role of management

Managers are responsible for adhering to our occupational health policies, as well as to applicable local requirements. Managers may also provide input into occupational health policy and strategies. Similarly, we expect division and business unit leaders to ensure their teams provide input on such strategies, policies and programs. Above all, leaders ensure adequate resources to support occupational health performance.

Collaboration with EHS

EHS partners daily with Global Employee Occupational Health. Shared activities include:

- Developing and reviewing occupational health programs
- Assessing potential workplace health hazards (chemical, biological, physical and mental health)
- Ensuring employee enrollment in applicable medical surveillance programs
- Preventing adverse health effects from hazards
- Identifying factors associated with injuries and illnesses
- Working with site health professionals to analyze and track our safety performance

Training on occupational health and safety

EHS training is critical to building employee competencies and to improving compliance, reducing risks and driving continuous improvement. EHS professionals complete an assessment of their activities and identify relevant topics in EHS training plans. These plans comply with internal and regulatory requirements for each country and are reviewed periodically to ensure they are current.

EHS training materials are available in both instructor-led and e-learning formats.

We also have a global standard that defines EHS training expectations for employees:

- Manager training covers specific responsibilities with regard to EHS compliance
- EHS professional training expands technical expertise
- Employee training covers the specific information they require for their jobs, focusing on hazards they encounter on the job and any corresponding control measures

Worker health services

Global Employee Health Services provide workers with access to health services and address health risks, all with the aim of keeping employees healthy.

We guarantee access to occupational health services for all of our employees, in accordance with our policies, guidelines and local regulatory obligations.

*For information about our global benefits programs, please see our **Well-being Report** on our corporate website.*

Global Employee Health Services provides occupational and health care services to employees that include:

- Medical clearances for job placement and evaluations to assess their abilities to perform job tasks
- Regulatory assessments for potential health hazards and reproductive health hazards
- Consultations to prevent injury and illness, such as those related to travel and unique workplace hazards
- When on-site Health Services clinics are present, on-site emergency care by certified health care professionals for employees with occupational and non-occupational injuries and illnesses; in addition, dedicated teams of trained first responders are available at all locations
- Treatment for employees with acute work-related injuries or illnesses at our on-site clinics, and when needed, referral to specialized medical services
- Vaccination campaigns for flu and other preventive vaccines

To develop and maintain awareness of all workplace health hazards, Global Employee Health Services maintains a close functional working relationship with site management, safety, biosafety, ergonomics and industrial hygiene professionals. Global Employee Health Services is also responsible for maintaining employee health records in accordance with local regulatory and privacy requirements.

Employee health is a priority, so we strive to continuously improve our programs. These efforts include communication of our global policies, procedures and protocols; administering regulatory and compliance audits; and providing critical oversight for our occupational health programs.

Health promotion, mental health and well-being

We provide resources, such as participation in group sport activities, smoking cessation campaigns and health screenings through local health promotion programs. Our EBRGs and other colleague groups organize conferences and lectures on a range of health topics (e.g., breast cancer awareness, screening guidelines for lung cancer, neurodivergence, disability inclusion, grief and depression, and more).

We also have a global Employee Assistance Program that gives employees free access to mental health care resources. Counseling, coaching and assistance are provided, as well as access to yoga, meditation and exercise tips. Many sites also have gym facilities. The Global Benefits team continually raises awareness of well-being and mental health.

*For further information on our programs and resources around health promotion, mental health and well-being, please see our **Well-being Report** on our corporate website.*

Global safety performance (employees)

In 2023, our Lost Time Incident Rate (LTIR) was 0.11 and our Recordable Incident Rate (RIR) was 0.28. There was one employee fatality in 2023 due to a motor vehicle accident.

In 2023, our top three types of recordable injuries were:

- 27% related to slips, trips and falls
- 23% related to ergonomics
- 22% related to being struck by or caught in

We focus on early identification of hazards through reporting and analysis, by eliminating high-risk tasks, improving engineering controls, and performing coaching and training to aid in identification and elimination of EHS risks.

Global safety performance (employees)[1]	2019	2020	2021	2022	**2023**
Workplace safety					
Recordable Incident Rate (RIR)[1]	0.30	0.16	0.20	0.26	**0.28**
RIR percentage change	0%	-47%	25%	31%	**8%**
Lost Time Incident Rate (LTIR)[1]	0.11	0.05	0.08	0.06	**0.11**
Fatalities[2]	0	0	0	1	**1**

Note: Injury rates are subject to change over time as new cases are added, and case classifications change in accordance with our own requirements and applicable regulatory requirements.

[1] LTIR/RIR: Calculated per the Occupational Safety and Health Administration (OSHA) methodology.

[2] In 2022 and 2023, the fatality was transportation-related.

	Lost Time		Total Recordable	
Injuries by business area (2023)	**Cases**	**% of total**	**Cases**	**% of total[1]**
Manufacturing (Merck Manufacturing Division)	**38**	**43%**	**98**	**43%**
Animal Health including Biopharma and Technology	**23**	**26%**	**43**	**19%**
Human Health	**12**	**14%**	**32**	**14%**
Research (Merck Research Labs)	**11**	**13%**	**36**	**16%**
Facility management	**2**	**2%**	**11**	**5%**
Global support functions (Legal, HR, IT, GSE, etc.)	**2**	**2%**	**10**	**4%**
Total	**88**	**100%**	**230**	**100%**

[1] Does not total 100 percent due to rounding.

	Lost Time		Total Recordable	
Injuries by causal factors (2023)	**Cases**	**% of total[1]**	**Cases**	**% of total[1]**
Slips/trips/falls	**31**	**35%**	**61**	**27%**
Struck by/caught in	**19**	**22%**	**50**	**22%**
Ergonomic	**14**	**16%**	**53**	**23%**
Motor vehicle	**8**	**9%**	**17**	**7%**
Biological exposure	**6**	**7%**	**10**	**4%**
Non-ergonomic	**4**	**5%**	**10**	**4%**
Physical/environmental exposure	**3**	**3%**	**8**	**3%**
Other	**3**	**3%**	**11**	**5%**
Chemical exposure	**0**	**—%**	**10**	**4%**
Total	**88**	**100%**	**230**	**100%**

[1] Does not total 100 percent due to rounding.

In 2023, as traffic on the roads returned to pre-pandemic levels, we have seen an increase in motor vehicle accidents. Our collisions per million miles figure has also returned to pre-pandemic levels. Our motor vehicle safety program uses a risk-based approach for assigning online defensive driving training, where the lowest-risk drivers complete training annually and high-risk drivers complete training quarterly. Training will continue to focus on the common causes of motor vehicle accidents (e.g., distractions, defensive driving, etc.).

Global safety performance (employees)	2019	2020	2021	2022	**2023**
Motor vehicle safety					
Collisions per million miles (CPMM)[1]	7.01	5.07	6.11	4.58	**7.20**

[1]CPMM: Reflects both personal and business use of Company-owned or -leased vehicles.

Global safety performance (non-employees—capital projects construction)

In 2023, GES received the Owner Safety Excellence Award for Best Owner Safety Program over a three-year period from the Construction Users Roundtable (CURT). CURT is a global organization that provides an international forum for the exchange of information and expertise to improve safety, productivity and the competitive advantage for the construction industry.

In 2023, GES spent 8.6 million construction hours globally. The construction RIR result was 0.56. The actual construction Days Away, Reassigned or Transferred (DART) rate was 0.23. Lastly, construction projects had over 110,000 Tap Ins (safety observations) reported in 2023.

Global safety performance (non-employees)	2019	2020	2021	2022	**2023**
Capital projects construction safety[1,2]					
RIR	0.42	0.60	0.28	0.50	**0.56**
DART[3]	0.15	0.24	0.11	0.21	**0.23**
Fatalities	0	0	0	0	**0**

Note: Injury rates are subject to change over time as new cases are added, and case classifications change in accordance with our own requirements and applicable regulatory requirements.

[1] RIR: Calculated per the Occupational Safety and Health Administration (OSHA) methodology.

[2] Primarily reflects capital projects over $100,000 managed by our global engineering group.

[3] DART: days away, reassigned or transferred, calculated per OSHA 300 methodology.

Global safety performance (non-employees—facility management contractors)

In 2023, our Integrated Facility Management (IFM) partners had 4,218,204 work hours and our permanent contractors working on site had 2,879,429 work hours. The IFM RIR was 1.01 and the LTIR was 0.73.

Global safety performance (non-employees)	2019	2020	2021	2022	**2023**
Facility management contractor safety[1]					
RIR	0.55	0.35	0.60	0.59	**1.01**
LTIR	0.42	0.26	0.27	0.28	**0.73**
Fatalities	0	0	0	0	**0**

Note: Injury rates are subject to change over time as new cases are added, and case classifications change in accordance with our own requirements and applicable regulatory requirements.

[1] LTIR/RIR: Calculated per the Occupational Safety and Health Administration (OSHA) methodology.

Compensation and benefits

Our employees are vital to our mission of improving and saving lives worldwide. Because our people are our greatest asset, we empower and support them in their professional and personal lives.

We recognize our people's importance by providing a career experience like no other that supports them with a valuable suite of compensation and benefits programs to support their professional achievement and personal well-being.

*Learn more about our **Compensation and Benefits** on our corporate website.*

$11.18 billion

Total compensation paid to employees, including benefits in 2023

GRI/SASB disclosures in this section:

GRI 2-30 GRI 201-3 GRI 203 GRI 401-2

*For more info on disclosures, see the **Reporting indices**.*

Our approach to compensation and benefits

The Company provides significant value for its employees through our compensation and benefits programs.

Employees and compensation	2019	2020	2021	2022	**2023**
Total compensation paid to employees, including benefits (in billions)	$9.56	$10.18	$9.92	$10.15	**$11.18**

Rewards and recognition

Our compensation programs are designed to recognize and reward employees for their accomplishments and the value they bring to the Company. The programs target different aspects of individual and enterprise-wide performance. They are monitored to ensure that they are competitive with those of other companies—and appropriate to the markets in which we compete for talent. In addition, we have a longstanding commitment to fair and equitable pay for all, consistent with our core values of integrity, fairness, and treating all employees with dignity and respect. We show this dedication by continuously monitoring our pay practices around the world.

Compensation

We are committed to investing in our people while supporting the needs of our business and colleagues worldwide. Our commitment to closely monitoring compensation trends keeps us one step ahead. We analyze external compensation data worldwide every year, which allows us to make rapid and informed pay decisions and ensure our compensation offerings are competitive.

In addition to a competitive base pay, we offer short-term incentives to reward contributions to our Company's success and long-term incentives that provide eligible employees with the unique opportunity to share in the ownership of our Company and its long-term success.

Global recognition program

INSPIRE is our global recognition program designed to sustain a culture of recognition and appreciation. We empower our employees to recognize each other for the work they do and how they do it through messages of appreciation, as well as points and cash rewards.

Benefits and well-being

Our Company's benefits and well-being programs draw from best practices to ensure quality, competitive value, protection from significant financial hardship, and access to tools and resources to support employees and their families through all stages of their career and their lives.

Physical, mental, financial and social well-being benefits

We are continuously evolving a culture of well-being that encompasses four pillars—physical, mental, financial and social. It fosters a safe and supportive work environment and enables our employees and their families to live their healthiest, fullest lives. Our comprehensive and integrated approach connects closely with our Company's values, including our culture of psychological and physical safety. Additionally, we follow a diverse and inclusive approach so our employees can live with purpose and feel safe to be their authentic selves.

Physical well-being involves a commitment to building a culture of prevention by providing support to employees and their families to avoid preventable diseases, as well as through high-quality medical plans and programs and resources to help build healthy habits for daily maintenance of healthy routines. In the event of illness, we provide holistic benefits and programs for best-treatment outcomes, long-term recovery and survivor support.

We firmly believe in the importance of mental well-being, and provide resources to support our employees' needs. This includes building awareness, early intervention, and prevention programs to help address stigma, build resilience and maintain good mental health.

Financial well-being is a sense of security and, for some, a feeling of control over day-to-day and long-term finances. We help employees build the confidence to take charge of their finances to reduce stress and increase feelings of security. Our programs provide financial knowledge and resources to manage commitments, meet goals, protect against risks and cope with unexpected surprises.

We develop positive interactions through our social well-being programs, which create a sense of belonging and connection to people and communities within and outside of work. We encourage employees to believe in their own self-worth and find purpose.

Retirement plans

Worldwide, our Company offers retirement benefits that are competitive with those of our peers and the general industry in each market we serve.

Outside the U.S., we have more than 80 pension plans (including defined benefit, cash balance and defined contribution plans) in over 40 countries. These plans often supplement government-sponsored social security pension benefits to improve employees' financial security through added retirement income.

In the U.S., we offer a defined benefit pension plan and a 401(k) plan with matching contributions. The average employee contribution rate of pay into the 401(k) plan is approximately 12 percent. Approximately 97 percent of U.S.-based employees participate in the 401(k) plan, and 100 percent participate in the pension plan. Additionally, U.S.-based employees who are at least age 55 and those who have provided at least 10 years of service after age 40 are eligible for subsidized medical benefits at retirement.[1]

Global flexible work arrangements

We understand life's complexity. That is why we foster an array of flexible work arrangements that will help our employees succeed personally and professionally as well as work, connect, and collaborate efficiently and flexibly. Flextime, summer hours, remote work, telework, job sharing, and part-time work are only a few of our Company's options to help our employees thrive while managing their personal lives.

Compensation, benefits and other employment terms and conditions may vary based on country, employee group and status, collective bargaining agreements and local legal requirements. The number of employees represented by various collective bargaining groups in 2023 was 13,156, or approximately 18 percent of our global employee population.

*For information on our other benefits, please see our **Well-being Report** on our corporate website.*

[1] Employees hired on or after April 1, 2022, are not eligible for post-65 subsidized retiree medical benefits.

Environmental Sustainability

Our purpose to save and improve lives is inextricably linked to fostering a healthy planet. It's why we embed our commitment to enabling a safe, sustainable and healthy future within our Strategic Framework. It's also why we continuously build on our long history of environmental stewardship and compliance, evolving our efforts in the face of a changing world.

Our Environmental Sustainability strategy has three focus areas: 1) Driving operational efficiency; 2) Designing new products to minimize environmental impact; and 3) Reducing any impacts in our upstream and downstream value chain.

Net zero

We committed to a net-zero target for our greenhouse gas (GHG) emissions across our global operations (Scopes 1, 2, and 3) by 2045, aligned with the guidelines of the Science Based Targets initiative (SBTi). (p. 75)

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Times since 2017 we have been honored as a winner of the Green Chemistry Challenge Awards, sponsored by the Environmental Protection Agency (EPA) and/or the American Chemical Society

Topics covered:

Climate, energy and air emissions

Water

Biodiversity

Waste

Materials

Playbook for the environment

To help direct and track projects in support of our targets, we have developed a series of guidance documents for our global sites to help them meet a variety of environmental sustainability targets. This year, we expanded this list with the addition of the Water Conservation Playbook. This approach guides projects consistently across our global network of sites and enables continuous improvement toward meeting our goals.

Climate, energy and air emissions

A healthy planet is essential to human and animal health and the sustainability of our business, while also providing opportunities for product innovation and reducing cost and risk. We have a long history of environmental stewardship and compliance, and we realize our strategy and efforts need to continuously evolve in the face of a changing climate.

As mentioned in our Access to Health section, the rising impact of climate change on health is a priority for our Company, and through our environmental stewardship and compliance, we're working to mitigate the impacts of climate change.

GRI/SASB disclosures in this section:

GRI 201-2	GRI 302	GRI 302-1	GRI 302-4	GRI 305	GRI 305-1	GRI 305-2
GRI 305-3	GRI 305-4	GRI 305-5	GRI 305-6	GRI 305-7		

*For more info on disclosures, see the **Reporting indices**.*

Goals	2023
Reduce our operational GHG emissions (i.e., Scopes 1 & 2) 46% by 2030, from a 2019 baseline.[1]	**12% below baseline**
Reduce our value chain (Scope 3) GHG emissions by 30% by 2030, from a 2019 baseline.[2]	**4% below baseline**
Source 100% of our purchased electricity from renewable sources by 2025.[3]	**57%**
Achieve net-zero greenhouse gas (GHG) emissions (Scopes 1, 2 & 3) by 2045.	In 2024, we committed to a net-zero target for our greenhouse gas (GHG) emissions across our global operations (Scopes 1, 2, and 3) by 2045, aligned with the guidelines of the Science Based Targets initiative (SBTi).

[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] Scope 3 GHG emissions include all other indirect emissions in a company's value chain. Emissions were based on our economic input-output model using our third party spend. Whenever possible, we replaced the relevant emissions calculated from our spend-based model with primary emissions data provided directly from our suppliers or calculated emissions data based on the activity. We adjusted our spend-based model to account for foreign exchange and inflation in order to normalize and compare our performance against our baseline year of 2019.

[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.

Policies

Climate change

Business Partner Code of Conduct

External charters, principles and initiatives that we endorse or guide our work on this topic:

- Paris Climate Agreement
- SBTi
- We Mean Business Coalition

Our approach to climate, energy and air emissions

Scientific data support that climate change is occurring, and we are taking action to reduce the economic, human and animal health risks associated with a changing climate.

We have adopted a set of climate goals to help us succeed in an increasingly resource-constrained world. We developed these goals to align with the latest climate science and to address the rising expectations of our customers, investors, external stakeholders and employees regarding the environmental impact of our operations and supply chain.

Our previous climate commitment was to be carbon neutral for Scopes 1 & 2 by 2025.

We have now increased our ambition and better aligned our approach with established guidelines by committing to be net zero by 2045 across Scopes 1, 2 & 3, aligned with the SBTi criteria. Our near-term reduction targets (2030) have been approved by SBTi.

In addition, we have continued to find ways to decrease our energy demand and increase the amount of renewable energy we purchase. In our **Business Partner Code of Conduct**, we request that suppliers conserve energy and engage in activities aimed at reducing GHG emissions. Our Procurement team engages our strategic suppliers in our efforts to reduce the environmental impacts within our supply chain.

We describe our approach to governance regarding climate-related issues in the Sustainability Governance section, **page 11**.

In 2024, we conducted a climate policy alignment assessment of trade associations by determining whether they had publicly disclosed formal positions on climate change and, if so, reviewing those positions in the context of our position on climate change.

*This assessment is on the **Sustainability Resources page** of our corporate website. For a more detailed discussion of our views on climate, see the Sustainability Resource page for our Public Climate Policy.*

Climate risk assessment

Climate change, or legal, regulatory or market measures to address climate change, may negatively affect our business. Climate change exposes us to physical risks (such as extreme weather conditions or rising sea levels), risks in transitioning to a low-carbon economy (such as additional legal or regulatory requirements, changes in technology, market risk and reputational risk), and social and human effects (such as population dislocations and harm to health and well-being). These risks can be either acute (short term) or chronic (long term).

The adverse physical impacts of climate change include increased frequency and severity of natural disasters and extreme weather events such as hurricanes, tornadoes, wildfires (exacerbated by drought), flooding and extreme heat. Extreme weather and sea-level rise pose physical risks to our facilities as well as those of our suppliers. Such risks include losses incurred as a result of physical damage to facilities, loss or spoilage of inventory, and business interruption caused by natural disasters and extreme weather events. Other potential physical impacts include reduced access to high-quality water in certain regions and the loss of biodiversity, which could impact future product development. These risks could disrupt our operations and supply chain, which may result in increased costs.

New legal or regulatory requirements may be enacted to prevent, mitigate or adapt to the implications of a changing climate and its effects on the environment. These regulations, which may differ across jurisdictions, could result in our Company being subject to new or expanded carbon pricing or taxes, increased compliance costs, restrictions on GHG emissions, investment in new technologies, increased carbon disclosure and transparency, upgrade of facilities to meet new building codes, and the redesign of utility systems, which could increase our operating costs, including the cost of electricity and energy. Our supply chain would likely be subject to these same transitional risks and would likely pass any increased costs to our Company, all of which may affect our ability to procure raw materials or other supplies at the quantities and levels required for our business.

While we understand the potential risks, there is limited data around the potential financial implications of these risks. In 2022/2023, we performed a Task Force on Climate-related Financial Disclosures (TCFD) gap analysis. This included a high-level TCFD-aligned

qualitative, physical and transitional climate risk and opportunity scenario assessment to examine which parts of our business are at the highest risk due to climate change and the associated costs.

We integrate these potential risks into our business planning, including investments in reducing energy use, water use and GHG emissions.

We have made these reductions a priority by establishing internal policies and practices focused on reducing energy use at our sites and minimizing GHG generation throughout our Company. By taking these steps, we are not only minimizing GHG emissions and mitigating the expected business impacts of future climate change regulations, we also expect to reduce operating costs.

*Additional information on the results of our analysis using the TCFD framework will be available on the **Sustainability Resources page** on our corporate website in the 4th quarter of 2024.*

Projects and funding

In 2023, we made a significant shift in how we integrate environmental sustainability into the capital investment process for our sites. Our goal was to create lasting value by prioritizing carbon footprint reduction, water conservation and solid waste management across our global sites. Previously, we relied on a dedicated Sustainable Capital Fund, which allocated $12 million annually to support sustainability initiatives at our sites. However, we realized that limiting our efforts to this fund was not enough. To advance our journey toward achieving net-zero GHG emissions, we embedded sustainability principles and funding into all projects, regardless of their size and scope. This allows us to better position ourselves on our net-zero journey.

We also made a strategic decision to prioritize creation of net-zero roadmaps focused on energy consumption and decarbonization projects for the top emitting sites across our enterprise. To ensure successful implementation, our Enterprise Capital Committee—a cross-functional leadership team that ensures our portfolio of capital projects aligns to our strategy and long-range operating plan—has incorporated emissions impact into its decision-making process by approving the new Environmental Sustainability Capital Principles that are reflected in our updated building design standards. This means the committee now considers the GHG emissions impact of any proposed capital project or investment at the right size, scale and timing that will enable us to achieve our goals.

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

Carbon offsets

We procured 3,968.80 metric tons of certified carbon offsets for our South San Francisco, California, site to meet the requirements of Leadership in Energy and Environmental Design (LEED) Zero Carbon certification for 2023. The carbon offsets are from Schneider Electric's Ecomix Offsets and are Green-e Climate Certified. The carbon credits that we purchased are registered with American Carbon Registry (ACR) and Climate Action Reserve, each of which require independent, third-party verification of projects and corresponding emission reductions achieved. The carbon offsets were generated by a mix of projects, including nitrous oxide (N_2O) abatement, industrial process efficiency and hydrofluorocarbon (HFC) abatement with carbon credit vintages ranging from 2017 to 2021.

*For more information on the carbon offsets, see the **Sustainability Resources page** on our corporate website.*

Energy use

We recognize the important role we play in identifying, adapting, and responding to the public health risks associated with climate change. Energy-demand reduction and the use of renewable energy are essential to our climate mitigation strategy, as they positively impact our efforts to reduce our direct GHG emissions.

Our longstanding support of stronger health systems in underserved areas is even more important given the evidence that certain disease patterns are associated with changing climate conditions.

Programs and initiatives

We have internal policies and practices focused on reducing energy use at our sites, including optimizing systems and equipment, consolidating excess facility space, and designing with the environment in mind. In addition, we have launched initiatives to better understand and reduce our supply-chain-related impacts. By taking these steps, we are minimizing GHG emissions, mitigating the business impacts associated with climate change and expecting to reduce operating costs.

Our manufacturing facilities, warehouses, laboratories, offices and vehicle fleet represent the majority of our energy consumption and are the primary targets of our energy-demand-reduction programs. Each site is responsible for managing its energy use. Our Global Energy & Sustainability Center of Excellence (CoE) supports sites by providing them with tools and best practices for energy-saving projects. The Environmental Compliance CoE and Environmental Sustainability CoE review environmental data to monitor sites' progress. Finally, teams across the Company support sites' work toward our goals.

In 2023, we redesigned our longstanding GENIUS (Global Energy Network for Improvement in Usage & Supply) Program to prepare for the significant increase in activity anticipated across our network. GENIUS is our energy management program that supports our environmental sustainability strategy and goals specific to energy and climate. The redesign of the GENIUS Program leverages two of the most recognized energy management best practices, ENERGY STAR and ISO 50001. The implementation of the GENIUS Program—Plan, Do, Check, Act (PDCA) Framework—ensures our sites organize and align their work to a structured energy-management program and to our environmental sustainability strategy and goals.

Through the redesign of the GENIUS Program, the Global Energy & Sustainability CoE developed a series of supporting tools, including a program playbook, gap analysis, resource requirements calculator, responsibility matrix and site-specific standard operating procedure (SOP) templates for site program formalization.

When appropriate, we leverage ISO principle 50001:2018. This international standard sets forth rules for an organization to follow to manage and improve energy performance via energy management systems (EnMS) with the intent of achieving continual improvement in energy performance.

Since 2016, 13 of our European sites have aligned their site energy management programs to ISO 50001:2018 through certification. Certification means the organization is managing energy to align to the requirements of the global standard. In addition, an external accredited certification body carries out annual surveillance audits, as well as recertification audits every three years, to ensure the EnMS are delivering energy performance and system improvement.

Employee engagement

Our employees have demonstrated remarkable collaboration in driving emission reductions and promoting energy efficiency.

One example is the "See Green, Be Green" initiative launched by our Ireland sites on World Earth Day 2021. This comprehensive and award-winning effort instills a sustainability mindset into their operations, contributing

to a greener and healthier future, focusing on culture, biodiversity and carbon and waste reduction. It is a grassroots-led effort that has successfully engaged employees and fostered a sustainability culture throughout our Ireland sites.

By adopting a country-level approach to sustainability, this collaborative, multi-site effort builds upon the achievements of ISO 50001:2018 Operational Energy Management Standard group certification. The execution strategy of "See Green, Be Green" involves a core country team made up of energy leads from each participating Ireland location, who facilitate the creation of concept roadmaps using design-thinking workshop principles. These roadmaps help identify areas of common focus and guide the execution of agreed-upon work streams, ensuring sustained collaboration.

The country core team is facilitated by the Global Energy Regional Lead and sponsored by the Country Leadership team, consisting of plant managers from each site. Additionally, each site has a director-level sponsor responsible for their individual energy program, led by the respective energy lead. While the site energy leads and teams focus on their own operational energy management and sustainability programs, the "See Green, Be Green" program maximizes collaboration across sites, complementing individual efforts. Cross-functional teams and leads within the workstream have been established to facilitate knowledge-sharing and maintain consistency.

*For more information, please see the Biodiversity section on pages **89-91** to learn more about this initiative.*

Facilities

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 and helps create short- and long-term plans to reduce sites' carbon intensity, build toward a low-carbon future and plan for net zero. 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.

All new buildings and major renovations are built following cost-effective and energy-efficient practices, and are designed to meet the LEED rating system or a comparable standard (e.g., Building Research Establishment Environmental Assessment Method [BREEAM], Excellence in Energy Efficiency Design [EXEED], Haute Qualité Environnementale [HQE], etc.). At a minimum, we expect offices and laboratories to achieve LEED Gold certification, and manufacturing, warehouse and utility buildings to achieve LEED Silver certification.

We have more than 3.7 million square feet of "green" real estate floor space, either completed or under construction.

In 2023, the consolidation of four of our New Jersey campuses into a single location in Rahway continued, driving a reduction in square footage and energy and water usage, supporting our net-zero commitment.

While some new facilities were built, other existing facilities were renovated, with multiple buildings receiving LEED Gold ratings in 2023.

*For more information on our sustainability bond, see page **10**. To learn more about our facilities and other global LEED projects, see the **Sustainability Resources page** on our corporate website.*

Renewable energy

We have committed to sourcing 100 percent of our purchased electricity from renewable energy by 2025. Photovoltaic (PV) arrays, wind turbines and other renewable energy installations avoid emissions, helping to reduce energy demand peaks and postpone or preclude adding new power plants. We continually look for opportunities for new on-site installations, vendor-supplied renewable energy through the electrical grid, and virtual power purchase agreement (VPPA) and power purchase agreement (PPA) projects.

In April 2023, our second VPPA, and our first in Europe, Cabrerizas Wind, began its operation. We have an offtake agreement with EDP Renewables for 40 megawatts (MW).

Since 2019, our continued efforts at renewable energy procurement have resulted in a total of 213.5 MW of VPPA and PPA commitments. This includes two more VPPA contracts that we anticipate starting operations for in 2024/2025—a 58 MW Old 300 Solar project in Texas and a 51 MW Postigo Solar project in Spain. The regional breakdown of these commitments is as follows:

- North America: 118 MW
- Europe: 91 MW
- Asia Pacific: 5 MW

Energy Star

In March 2024, the U.S. EPA again recognized our Company with our 17th consecutive Sustained Excellence Award. This is also the 19th consecutive year we have been recognized by ENERGY STAR for excellence in energy management.

In 2023, we continued to successfully use ENERGY STAR benchmarking tools such as the ENERGY STAR Portfolio Manager to obtain the ENERGY STAR Certified Building label for three buildings.

For the 16th consecutive year, our Puerto Rico facility was awarded the ENERGY STAR Pharma Energy Performance Indicator (EPI) for superior energy efficiency and environmental performance among U.S. pharmaceutical manufacturing plants.

Vehicle fleet

Approximately nine percent of our total energy use is associated with our vehicle fleet. We have a roadmap to transition to a full battery electric vehicle (BEV) fleet. The implementation depends on the availability of like-for-like electric vehicles (EV) and the development of public charging infrastructure. Our current emphasis includes introducing hybrid vehicles as a bridge in Latin America and Asia Pacific/Japan (APJ), deploying EVs in mature European, Middle Eastern and African (EMEA) markets, and starting EV pilots in North America. Currently, these vehicles account for 38 percent of our fleet in EMEA; 64 percent in APJ; and 1 percent in Latin America and North America. However, the worldwide vehicle supply shortage has slowed our transition.

Total Energy Use	2019	2020	2021	2022	**2023**
Total energy use (GJ)	17,607,000	17,057,000	17,102,000	17,472,000	**17,399,000**

Breakdown (by type) of total energy used (Scope 1 and location-based Scope 2 energy use)[1]

	2019	2020	2021	2022	**2023**
Natural gas (Scope 1)	63%	65%	63%	64%	**63%**
Renewable energy generated and used on site (Scope 1)[2]	0.07%	0.06%	0.06%	0.09%	**0.30%**
Fleet fuel (Scope 1)	9%	8%	8%	8%	**9%**
Fuel oil (Scope 1)	2%	2%	2%	2%	**2%**
Biofuel (Scope 1)	0.0006%	0.0007%	0.0008%	0.0008%	**0.0006%**
Spent solvents (Scope 1)	0%	0%	0%	0%	**0%**
Coal (Scope 1)	—	—	—	—	**—**
Purchased electricity (Scope 2)[3]	23%	23%	25%	23%	**23%**
Purchased steam (Scope 2)	3%	3%	3%	3%	**3%**

[1] May not add to 100 percent due to rounding.

[2] Includes solar, wind and other renewable energy generated on site where renewable energy credits or guarantees of origin have been retained or retired.

[3] Includes electricity sourced from external suppliers. Reported using Scope 2 location-based value in accordance with the GHG Protocol.

Breakdown (by type) of total energy used (Scope 1 and market-based Scope 2 energy use)[1]

	2019	2020	2021	2022	**2023**
Natural gas (Scope 1)	63%	65%	63%	64%	**63%**
Renewable energy generated and used on site or purchased (Scopes 1 and 2)[2]	6%	9%	10%	10%	**13%**
Fleet fuel (Scope 1)	9%	8%	8%	8%	**9%**
Fuel oil (Scope 1)	2%	2%	2%	2%	**2%**
Biofuel (Scope 1)	0.0006%	0.0007%	0.0008%	0.0008%	**0.0006%**
Spent solvents (Scope 1)	0%	0%	0%	0%	**0%**
Coal (Scope 1)	—	—	—	—	**—**
Purchased electricity (Scope 2)[3]	17%	14%	15%	14%	**11%**
Purchased steam (Scope 2)	3%	3%	3%	3%	**3%**

Note: In 2023, our sites' fuel usage and purchased electricity consumption remained relatively flat due to capital expansion, offset by site consolidations and energy efficiency measures.

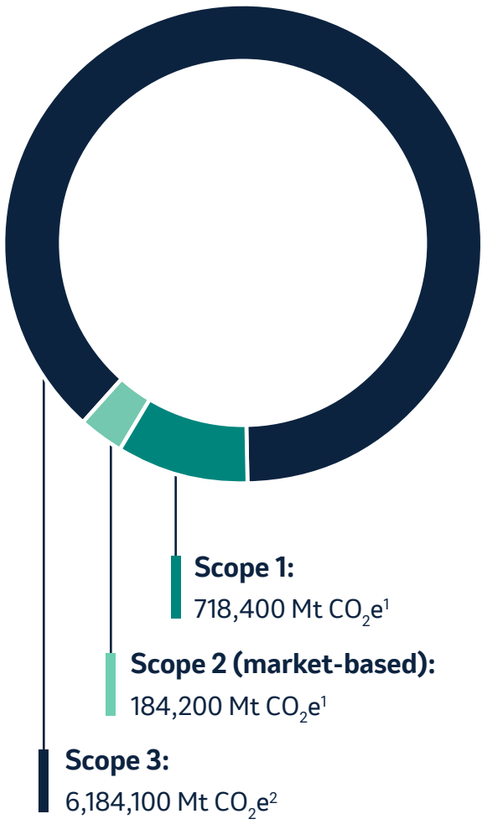
[1] May not add to 100 percent due to rounding.

[2] Includes solar, wind and other renewable energy used on site or purchased, where renewable energy credits or guarantees of origin have been retained or retired.

[3] Includes solar, wind and other renewables generated on site where renewable energy credits (RECs) have been sold. Reported using Scope 2 market-based value in accordance with the GHG Protocol.

GHG emissions

GHG Emissions (2023)



Total GHG emissions
(market-based):

7,086,700 Mt CO_2e

Total GHGs (Mt CO_2e)	2019	2020	2021	2022	**2023**
Scope1[1,3,4]	727,300	709,000	689,900	723,000	**718,400**
Scope 2 location-based[1,3,4]	387,100	372,300	378,100	352,000	**356,900**
Scope 2 market-based[1,3,4]	295,600	237,800	234,600	219,300	**184,200**
Total Scopes 1 & 2 GHGs (market-based)[1,3,4]	1,022,900	946,800	924,500	942,300	**902,600**
Scope 3 GHGs[2,3]	6,427,900	6,449,800	6,578,500	6,330,100	**6,184,100**
GHG intensity (Scopes 1 & 2 - market-based)[5]	16.61	14.89	13.88	13.86	**12.54**

ERM CVS provided limited assurance of select 2023 GHG and water data included in this report and submitted to CDP. To view the ERM CVS limited assurance statement for our environmental data, please visit the **Sustainability Resources page** of our corporate website. The limited assurance engagement was performed in accordance with the International Standard on Assurance Engagements ISAE 3000.

[1] Our 2023 data was externally assured by ERM CVS.

[2] Select 2023 data was externally assured by ERM CVS. To view the ERM CVS limited assurance statement for our environmental data, please visit the **Sustainability Resources page** of our corporate website.

[3] In accordance with the World Resource Institute's GHG Protocol, prior-year data have been adjusted to add or remove facilities that have been acquired, sold or spun-off. Adjustments also reflect changes in methodology to ensure consistency from year to year, including Scope 2 emission factor updates [E-GRID (2023), IEA (2023), EU Residual (2023), UK Defra (2023) & Inventarios Corporativos (2023)] and Scope 1 & 3 emission factor updates [EPA Climate Leaders (2023)]. The World Resource Institute's GHG Protocol defines Scope 1 GHG emissions as 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. Scope 3 GHG emissions include all other indirect emissions in a company's value chain. Emissions were based on our economic input-output model using our third party spend. Whenever possible, we replaced the relevant emissions calculated from our spend-based model with primary emissions data provided directly from our suppliers or calculated emissions data based on the activity. We adjusted our spend-based model to account for foreign exchange and inflation in order to normalize and compare our performance against our baseline year of 2019.

[4] The operational control approach is used to account for GHG emissions for Company facilities globally. Only those facilities over which our Company has operational control are included in the GHG inventory.

[5] Total Scope 1 & Scope 2 market-based metric tons CO_2e per employee.

Reduction of GHG emissions

From 2022 to 2023, our combined year-over-year Scope 1 and market-based Scope 2 GHG emissions reduced by four percent. The decrease was primarily due to reductions in market-based Scope 2 GHG emissions. Market-based Scope 2 GHG emissions reduced due to an increase in usage of renewable electricity.

We have analyzed and reported our Scope 3 impacts using primary activity data and accepted emission factors, in addition to an economic input-output model based on our third-party spend. In 2023, our Scope 3 GHG emissions decreased as compared to 2022. While performance was mixed across our reported categories, a decrease in our largest category, Purchased Goods and Services, led to an overall decrease from 2022.

Our analysis shows that our Scope 3 GHG emissions impacts are more than seven times greater than our combined Scopes 1 & 2 emissions. We are working to reduce those impacts through a robust supplier engagement approach to drive collaboration upstream and downstream from our value chain. By engaging with our suppliers in a phased approach, we can identify key ways to reduce our GHG emissions and pinpoint additional tangible benefits for the business. In 2023, we have actively worked with suppliers representing 50 percent of our Scope 3 emissions footprint. We aim to expand this number to 80 percent in 2024. Additionally, we are striving to reduce waste in our operations, to use more sustainable materials, and to change the way we commute and travel for business to further embed environmental sustainability into the way we work.

We report our GHG emissions as required by regulations in certain countries and annually through CDP Climate. In 2023, CDP graded our disclosure as a “B” or a rating of “management”.

Scope 3 GHG details (Mt CO_2e)	2019	2020	2021	2022	**2023**
Purchased goods and services[1]	4,876,100	5,054,300	5,162,200	4,871,900	**4,766,800**
Capital goods[1]	328,500	444,900	420,200	384,000	**320,400**
Fuel and energy-related activities not included in Scopes 1 & 2[2,10]	220,200	194,100	216,500	230,700	**224,000**
Upstream transportation and distribution[1]	237,400	229,800	224,500	347,300	**274,200**
Waste generated in operations (excluding recycled and composted waste)[3,4]	18,800	21,900	23,800	24,900	**19,500**
Employee business travel[1,5,10]	327,200	208,100	228,700	248,800	**387,000**
Employee commuting[6]	243,700	114,800	117,200	119,000	**165,100**
Downstream transportation and distribution[7]	124,800	136,000	134,800	87,100	**16,200**
Use of sold products[8,10]	2,900	2,900	3,000	4,500	**3,300**
End-of-life treatment of sold products[9]	48,300	43,000	47,600	11,900	**7,600**
Total[11]	6,427,900	6,449,800	6,578,500	6,330,100	**6,184,100**

[1] Emissions were based on our economic input-output model using our third party spend. Whenever possible, we replaced the relevant emissions calculated from our spend-based model with primary emissions data provided directly from our suppliers or calculated emissions data based on the activity. We adjusted our spend-based model to account for foreign exchange and inflation in order to normalize and compare our performance against our baseline year of 2019.

[2] Emission factors from Argonne National Laboratory’s GREET Model were used in conjunction with primary fuel and energy-use data. Does not include purchased cooling water.

[3] Primary-waste data were used with the U.S. EPA’s WARM Model.

[4] Including recycled and composted waste in these calculations would result in negative emissions in 2019 (-62,400 Mt CO_2e), 2020 (-48,900 Mt CO_2e), 2021 (-46,300 Mt CO_2e), 2022 (-57,900 Mt CO_2e) and 2023 (-51,500 Mt CO_2e).

[5] Based on primary travel vendor data, employee-reimbursable mileage and UK Defra factors. Business travel has returned to pre-pandemic levels.

[6] 2020-2023 reductions caused by shifts to remote and hybrid working models.

[7] Calculated using primary vendor data for the products shipped via our wholesalers at the country level through different modes of transportation and 2023 UK Defra factors for tonne.km

[8] Due to recent acquisitions, we are currently evaluating the applicability of additional products to this category. This category currently includes the impacts of our Animal Health products ENGEMYCIN® (oxytetracycline), NEO SPRAY CAF® (oxytetracyclinum), OXYTETRIN® LA (oxytetracycline). We have also included the energy use impacts of the U.S.A 2019-2023 sales of our Biomark products.

[9] Calculated assuming that all primary, secondary and tertiary packaging purchased was disposed of by our customers. Packaging material data was used with the U.S. EPA’s WARM Model.

[10] ERM CVS provided limited assurance of our 2023 Scope 3 emissions (415,189 MT CO_2e) comprised of World Resources Institute’s GHG Protocol Scope 3 Categories 3 (224,000 MT CO_2e), 11 (3,300 MT CO_2e) and the primary activity data portion of Category 6 (187,889 Mt CO_2e or 44.6 percent of the total category), which include primary vendor and employee reimbursable data. The total reported for Category 6 includes non-primary travel vendor data emissions which were based on our 2023 third-party spend data and an Economic Input-Output Model performed by Climate Earth, Inc.

[11] May not add up to total due to rounding.

*Our CDP Climate Change Questionnaire is available on **CDP’s website**, which CDP has aligned to the TCFD reporting recommendations.*

Other emissions

We are committed to controlling air emissions from our facilities to reduce local, regional and global environmental impacts. Air emissions are generated by our manufacturing and research operations, as well as by burning fuel in on-site equipment and fleet vehicles. Our Air Management Standard requires our facilities to quantify and control air emissions to comply with both applicable regulations and emission standards. Where regulations do not mandate emission quantification, our facilities are required to use guidelines and tools associated with our Air Management Standard to estimate emissions. These guidelines and tools were developed using U.S. Environmental Protection Agency (U.S. EPA) emission calculation methodologies.

Any increase in production can negatively impact our emissions trends. While there are efforts to minimize solvent use in production, solvents are needed for cleaning and disinfecting purposes. The Montreal Protocol mandates phase-out of refrigerants that are ozone-depleting substances (ODS) per schedules approved for individual countries. Our facilities strive to maintain compliance with applicable regulatory requirements that have been established in accordance with each country's commitments.

Our Environmental Compliance CoE provides assistance to our facilities to obtain appropriate environmental permits, and to quantify and control air emissions to comply with applicable regulations and emission standards.

Production and research emissions

Many of our pharmaceutical manufacturing processes, cleaning/disinfection operations and research laboratories require the use of solvents. Evaporation of solvents into the air is our primary source of volatile organic compound (VOC) emissions. In an effort to reduce VOCs, we've incorporated reductions in solvent usage as an element of our Green & Sustainable Science program.

The key elements of the program include designing efficient processes that use less hazardous and/or reduced quantities of organic solvents. We are also using water-based methods for cleaning our process equipment where it has been shown to be as effective as solvent-based methods. To reduce emissions from processes where organic solvents are used, we use pollution control technologies such as conservation vents, carbon filters, thermal oxidizers, condensers and scrubbers.

*For more information on this program, please see pages **99-100**.*

Fossil fuel combustion emissions

Air emissions are also generated by burning fuel in our boilers and power-generation turbines (for heat and energy), and by other combustion processes such as thermal oxidizers (for treating air emissions) and incinerators (for destroying waste). Our fleet vehicles and aircraft also burn fuel and generate air emissions. These combustion processes result in emissions of carbon dioxide (CO_2), nitrogen oxides (NOx), sulfur oxides (SOx) and VOCs.

We strive to make our facilities more energy efficient through our energy management programs and to improve the fuel efficiency of our fleet vehicles. Our Company's actions to reduce our GHG emissions to meet our public climate commitments will also result in a reduction of NOx, SOx and VOC emissions.

From 2022 to 2023 there was an increase in NOx emissions resulting from a combination of factors, including a slight increase in the use of jets and fleet vehicles, more accurate emission tracking methods, and variations in energy needs for combustion sources at multiple facilities. SOx emissions remained consistent between 2022 to 2023.

VOC emissions decreased from 2022 to 2023 due to variations in production, replacement of solvent-based cleaning with water-based cleaning at one of our facilities, and data collection improvements with the adoption of more accurate emission tracking methods. Emissions of ODS are the result of non-routine releases from temperature control and fire suppression systems and can vary from year to year.

Air pollutant emissions by type (Mt)[1]	2019	2020	2021	2022	**2023**
Nitrogen oxides (NOx)	394	388	347	362	**378**
Sulfur oxides (SOx)	27	22	24	30	**30**
Volatile organic compounds (VOCs)	401	394	357	337	**301**
Ozone Depletion Potential (ODP)	0.6	0.3	0.2	0.7	**0.1**

Note: Previously reported data have been restated per our methodology, which includes adding facilities that have been acquired and removing facilities that have been sold or spun-off.

[1] Data are estimated using conservative assumptions and factors, not measured or weighed.

Water

Access to clean water is critical for human health. Water is a key input to our manufacturing operations, and we assess water risk throughout our network as a standard business practice. As we strive to meet the health needs of our patients, we understand that we may encounter water risk in the areas in which we operate. Our global water strategy, which supports United Nations Sustainable Development Goal (SDG) 6: Clean Water and Sanitation, aims to achieve sustainable water management within our operations and our supply chain.

To achieve these strategic objectives, we are focusing on the following commitments:

- Ensuring our wastewater discharges comply with local and national standards, as well as internal requirements
- Understanding and controlling our operational water footprint
- Managing water risk at our facilities and in our supply chain
- Reporting publicly on our water usage and goals

Goal	2023
Maintain global water use at or below 2015 levels.	**3.6 million m³ (16%) below**

Policies

Pharmaceuticals in the environment

Responsible disposal of medicines

Water stewardship

Global Antimicrobial Resistance Action Plan

Business Partner Code of Conduct

External charters, principles and initiatives that we endorse or guide our work on this topic:

- UN CEO Water Mandate

GRI/SASB disclosures in this section:

GRI 303	GRI 303-1	GRI 303-2	GRI 303-3	GRI 303-4

*For more info on disclosures, see the **Reporting indices**.*

Our approach to water use

Our Water Management standard requires our facilities to comply with applicable water-related regulatory requirements and to minimize water-discharge-related impacts. In addition, our standard also requires our facilities to identify water reduction opportunities and to assess water risk in the watersheds in which we operate.

Each site is responsible for managing its approach to water. The Environmental Compliance CoE and Environmental Sustainability CoE review environmental data to monitor sites' progress. Above-site teams from across the Company support sites' work toward meeting our goals.

In 2023, we achieved a 16 percent reduction in our water usage compared to our 2015 baseline. This reduction is consistent with our ongoing commitment to achieving our stated target: by 2025, we will maintain global water use at or below 2015 levels. Our sites are employing various technologies and techniques to reduce our water footprint and improve operational performance.

In our **Business Partner Code of Conduct**, we request that suppliers conserve natural resources and engage in activities aimed at reducing water usage. We also ask that they have systems in place to quantify the amount of water used.

*For more information on supplier engagement on water-related topics, see page **86**.*

Stewardship

We have endorsed the UN CEO Water Mandate, a public commitment to adopt and implement a comprehensive approach to water management, and we have aligned our water program with its principles. CEO Water Mandate endorsers have a responsibility to make water resource management a priority and to work with governments, UN agencies, non-governmental organizations (NGOs), local communities and other interested parties to address global water challenges. We continue to identify partnerships that will help us advance our water stewardship priorities in the areas in which we operate. These projects also support the goals of SDG 15, which strive to "protect, restore and promote sustainable use of terrestrial ecosystems."

We report our water security annually **through CDP**. In 2023, CDP graded our disclosure with a C rating, which, according to CDP, is consistent with the Biotech & Pharma sector average.

Trees are an important part of restoring land and improving water quality. As trees grow, they improve soil fertility, reduce erosion and protect from excessive sun and heat. Reforestation also helps protect waterway banks, avoid water pollution and silting, maintain soil permeability, contribute to the recharge of aquifers, improve the water flow of springs, improve water quality and quantity, and rebuild ecological corridors that facilitate the gene flow of fauna and flora.

In 2023, we supported One Tree Planted on its Intelligent Forests, Brazil project, where our Cruzeiro site is located. Together with the local planting partner, ASSOBIO, a women-led organization, a total of 569,440 trees were replanted in public and private properties across the state of Sao Paulo, restoring 341 hectares of land. As part of the project, we also supported the planting of trees in degraded areas around public natural reserves, helping build ecological corridors. The project planted over 70 native species of seedlings, with careful selection of species to recreate natural conditions and support a succession model.

In addition, the project included a Seed Collection Program, which trained and provided tools for local teams to collect their own seeds, supply projects, and become "forest multipliers." The project also provided work opportunities for women, fostering gender equality, autonomy and leadership. Local engagement, consultation and education were also significant components of the project to ensure long-term success, future scaling opportunities and the prevention of future environmental degradation.

Water as a shared resource

We assess water risk throughout our network as a standard business practice.

Our process is as follows:

1. The World Resource Institute's (WRI) Aqueduct Water Risk Atlas tool is used as an initial step to map water risk. The sites are categorized annually using the "Baseline Water Stress" indicator, which is the ratio of total annual water withdrawals to total annual renewable supply, and accounts for upstream consumptive use. Higher stress values indicate more competition among water users.
2. Sites identified as high risk are further assessed utilizing a catchment-specific approach to confirm that the catchments are experiencing high water stress.
3. Sites known to experience water risk, regardless of the WRI Aqueduct Water Risk Atlas tool assessment, are included as high-risk sites.
4. Water conservation plans are put in place at high-risk sites that use more than 100,000 m^3 of water per year. We work with a third-party water use expert to evaluate opportunities for water use reductions at these sites, resulting in site-specific water conservation plans.
5. Sites that do not meet the water use threshold will continue to be monitored for operational risk, and conservation plans will be put in place as needed.

Performing this assessment ensures we can adapt our strategy to changing stressors in each catchment. It also enables us to better prioritize facilities and catchments for water stewardship activities and lays the foundation for potential future water targets in priority locations.

In 2023, the WRI Aqueduct Water Risk Atlas tool identified four of our manufacturing and/or research facilities as being in areas with "extremely high" Baseline Water Stress, and 11 as being in areas with "high" Baseline Water Stress. In 2023, there were the same number of sites in areas of "extremely high" and one less site in "high" risk than in 2022. As a result of the above methodology, we continue to have two sites with water conservation plans in place.

The sites that use the most water in our network are in the U.S. Of these, two are in areas of "high" Baseline Water Stress according to the WRI Aqueduct Water Risk Atlas tool but, through the assessment process described above, are considered medium risk.

Water discharge-related impacts

We conduct environmental risk assessments on our products (small molecules, biologics and vaccines) from the development phase through product launch, to understand and manage product impacts both from manufacturing and patient use. We assess products in a manner consistent with the most stringent applicable global regulations, including the regulatory review processes of the U.S. Food and Drug Administration and the European Medicines Agency. Product environmental safety profiles are reassessed during periodic renewals of product filings, and risk mitigation actions are implemented when needed.

We use the information from our risk assessments to establish or update our internal, compound-specific Environmental Quality Criteria (EQC), which are used to confirm that wastewater discharged from our facilities does not contain levels of residual products that present a risk to human health or the environment. Our manufacturing facilities are required to use EQC, along with industry-accepted risk assessment methods, to establish procedures for managing and controlling active pharmaceutical ingredients (APIs) in their wastewater.

Each facility uses the internal EQC standards to:

- Assess the potential risk from its operations using science-based and industry-accepted risk assessment methods
- Minimize environmental impacts from wastewater discharges in the local watershed
- Establish procedures for managing, treating or controlling APIs in wastewater prior to discharge, where needed

Our facilities have, or will be provided with, API treatment or reduction technology such as advanced oxidation where needed, so that our wastewater discharges meet both regulatory requirements and these internal standards.

The Environmental Review Committee oversees our internal EQC standards. We also provide wastewater discharge criteria to suppliers that manufacture pharmaceutical compounds for us, and have initiated detailed assessments of our suppliers to better understand and address potential impacts.

As a member of the Antimicrobial Resistance (AMR) Alliance and signatory to the Industry Roadmap for Progress on Combating AMR, we are delivering on our commitments to reduce the environmental impacts from antibiotic residue in wastewater through implementation of the AMR Alliance Common Antibiotic Manufacturing Framework. We have reviewed the operations of our human health antibiotic manufacturing facilities and third-party human health antibiotic suppliers to assess their wastewater treatment controls. We also have developed a mechanism for transparently demonstrating that our supply chain meets the standards in this framework, which was presented in the **AMR Industry Alliance Progress Report**.

We participate in efforts to address water discharge-related impacts with various organizations, including the European Federation of Pharmaceutical Industries and Associations (EFPIA). The EFPIA, Medicines for Europe and the Association of the European Self-Care Industry (AESGP) have worked together to develop the Eco-Pharmaco-Stewardship (EPS) initiative.

The EPS initiative considers the environmental impacts of a medicine throughout its lifecycle, and addresses the roles and responsibilities of all parties in managing those impacts. This includes public services, the pharmaceutical industry, environmental experts, doctors, pharmacists and patients.

*For more information on our supply chain, please see pages **113-121**.*

Our water withdrawals

Water use by source (million m³)[1]	2015	2019	2020	2021	2022	2023
Groundwater	12.0	10.2	10.1	9.7	10.1	**10.0**
Fresh surface water[2]	3.9	2.6	2.9	2.6	2.0	**2.0**
Brackish or sea water[2]					0.0	**0.0**
Third-party water	7.0	6.8	7.0	7.1	7.0	**7.3**
Total[3]	23.0	19.7	19.9	19.3	19.1	**19.4**

ERM CVS provided limited assurance of select 2023 greenhouse gas (GHG) and water data included in this report and submitted to CDP. Values externally assured by ERM CVS include All Areas third-party water, total pumped water (groundwater plus fresh surface water) and total withdrawal. To view the ERM CVS limited assurance statement for our environmental data, please visit the **Sustainability Resources page** of our corporate website. The limited assurance engagement was performed in accordance with the International Standard on Assurance Engagements ISAE 3000.

[1] In accordance with the GHG Protocol, prior-year data has been adjusted to add or remove facilities that have been acquired and sold. 2015 data is presented as a baseline year to demonstrate progress against our goal in addition to the most recent five years data.

[2] Total Surface Water: Prior to 2022, Fresh Surface Water and Brackish or Sea Water were not differentiated and are presented as a single data point.

[3] All values above are rounded to one decimal place. As a result, the total values shown may not equal to the sum of the individual source totals.

Water use by risk in the following tables is categorized according to data obtained via the WRI Aqueduct Water Risk Atlas tool and our internal risk assessment.

Water use by source (million m³) (2023)[1]	All areas (total)[1]	Areas of extremely high or high stress WRI Aqueduct Water Risk Atlas Output	Areas of stress after internal risk assessment methodology
Groundwater	**10.0**	**0.3**	**0.0**
Fresh surface water	**2.0**	**0.0**	**0.0**
Brackish or sea water	**0.0**	**0.0**	**0.0**
Third-party water	**7.3**	**2.5**	**0.7**
Total[2]	**19.4**	**2.8**	**0.7**

[1] Values externally assured by ERM CVS include All Areas third-party water, total pumped water (groundwater plus fresh surface water) and total withdrawal.

[2] All values above are rounded. As a result, the total values shown may not equal the sum of the individual source totals.

In 2023, we used approximately 19.4 million cubic meters of water globally versus 23.0 million cubic meters in 2015, representing a 16 percent reduction in water usage from the baseline year. Water use increased slightly from 19.1 million cubic meters in 2022 to 19.4 million cubic meters in 2023. Water withdrawal is variable based on manufacturing and research activities year to year.

Approximately 10 percent of the total water we used in 2023 was supplied from surface water sources, and 52 percent was supplied by groundwater sources, with the balance sourced from third-party water supplies. Our sites employ a variety of technologies and techniques aimed at reducing our water footprint and improving operational performance.

Closed-loop cooling systems, which reduce freshwater use, are employed at many of our facilities worldwide. Reverse osmosis (RO) “reject water” is reused for non-potable and non-process applications such as cooling tower feed water. In all, 1.5 million cubic meters of water was recovered, reused or recycled at our facilities in 2023, which is equivalent to 8 percent of our total water use. The increase from 1.0 million cubic meters in 2022 is due to improvements in water balance accounting at our largest water use site.

Our water use reduction initiatives include:

- Consideration of water use in process design
- Cooling system optimization
- Prompt repairs and maintenance of steam distribution systems and traps
- Recovery and reuse of steam condensate and “reject water”
- Process water purification system optimization
- Avoiding the use of water in mechanical seals, such as those in pumps

*For information on the specific water sources affected in areas experiencing high and extremely high water risk, see our **CDP Water Security** response. For our water assurance letter, visit the **Sustainability Resources page** on our corporate website.*

Our water discharges

In the following table, water discharge by receiving water body risk is categorized according to data obtained via the WRI Aqueduct Water Risk Atlas tool and our internal assessment. We understand that following the annual assessment, site water-risk categorization could change.

Wastewater from our facilities is managed and treated to meet regulatory standards and minimize environmental impacts prior to discharge. On-site wastewater treatment facilities are operated at many of our production and research facilities.

Where on-site treatment is not provided, wastewater is discharged to external wastewater treatment facilities with the technology and capacity to treat our wastewater. As described on page **86**, many of our production facilities are equipped with advanced wastewater treatment technologies to ensure our facilities meet both regulatory requirements and the internal standards required by our EQC Program.

*For more information on our water consumption and discharge treatment, refer to our **CDP Water Security** Report.*

Water discharge by receiving water body (million m³) (2023)[1,2]	**All areas (total)**	**Areas of extremely high or high stress WRI Aqueduct Water Risk Atlas Output**	**Areas of stress after internal risk assessment methodology**
Groundwater	**0.0**	**0.0**	**0.0**
Fresh surface water	**8.5**	**0.0**	**0.0**
Brackish or sea water	**0.1**	**0.0**	**0.0**
Third-party treatment	**5.8**	**1.6**	**0.4**
Total[3]	**14.5**	**1.6**	**0.4**

[1] All values exclude rainwater.

[2] Value externally assured by ERM CVS is All Areas total discharge.

[3] All values above are rounded. As a result, the total values shown may not equal the sum of the individual receiving water body totals.

Biodiversity

We recognize that protecting biodiversity is important to the planet and to our growth. At present, we have not measured the impacts we have on biodiversity either directly or indirectly through our products. We do, however, have a long history of responsibly managing pharmaceuticals in the environment in an effort to prevent and reduce pollution in the areas in which we operate, protecting species and ecosystems from harm.

GRI/SASB disclosures in this section:

GRI 304	GRI 304-2	GRI 304-3

*For more info on disclosures, see the **Reporting indices**.*

Our approach to biodiversity

We are developing a strategy to better understand if the sourcing of certain inputs to our products have impacts on global biodiversity and deforestation. The results of this assessment will be incorporated into our responsible sourcing strategy and will support our annual **CDP Forest** response.

We have sites around the world engaged in projects to preserve biodiversity. In 2023, we earned the **Pharma Industry Awards, Responsible Care Award**, for our "See Green, Be Green" initiative in Ireland. In 2022, we conducted biodiversity assessments across our Irish facilities and the sites became business members to the All-Ireland Pollinator Plan (AIPP). As part of that membership, each site must complete yearly actions to improve biodiversity and submit an annual update to Biodiversity Ireland with the goal to meet or exceed achievement of proposed actions. While particular efforts vary across our Irish facilities, actions taken in 2023 include reduction in pesticide use; planting of pollinator and native species of plants, trees and bulbs; installation of "small bug hotels;" the planting of natural flowering meadows; returning land to natural habitat; community engagement; communication and awareness campaigns; and tracking and monitoring of progress (see Climate, Energy and Emissions for more information on this initiative).

Other 2023 actions include planting a large, biodiverse field at our Haarlem, Netherlands site filled with native plants that also includes a beehive housing approximately 15,000 bees.

Finally, we engage with external groups such as The Pharmaceutical Supply Chain Initiative (PSCI), the Biopharma Sustainability Roundtable and the Pharmaceutical Environment Group to learn, discuss and collaborate on industry environmental challenges and opportunities, such as biodiversity. Additionally, we engage with external stakeholders like investors on emerging biodiversity and nature loss issues.

Animal Health and biodiversity

Our Animal Health business not only supports environmental sustainability by advancing the health of animals, but also supports biodiversity and conservation across both aquatic and terrestrial landscapes by:

- Monitoring numerous aquatic species by using passive integrated transponder tags
- Allowing statistically sound estimations of wild fish populations, survival rates and migration patterns
- Offering a broad portfolio of innovative medicines, vaccines and technologies to promote sustainable growth in the aquaculture and conservation industry
- Tracking invasive species by helping researchers assess how these animals distribute throughout the environment and interact with native flora and fauna
- Providing solutions to assist in the conservation of aquatic species such as salmon, steelhead/rainbow trout, sturgeon and freshwater fish populations
- Collecting and providing key information in the research of sea turtles, salamanders, abalone, penguins, frogs, snakes, bats and many other species
- Donating BRAVECTO® (fluralaner) to WIRES, Australia's largest wildlife rescue organization, to combat a deadly disease affecting wombat populations

*See our story on **biodiversity** on our corporate website for more information.*

Habitats restoration

Since 2016, as part of our Company-wide UN CEO Water Mandate commitment, we have invested annually in habitat restoration and reforestation projects that improve water quality, restore biodiversity and remove carbon dioxide from the atmosphere. Working with organizations such as The Nature Conservancy and One Tree Planted, we have identified projects to invest in near our sites. By investing in watershed management with these collective action projects, we have also been able to integrate community mobilization by facilitating volunteer opportunities for employees who live near our sites and for the communities where they reside.

*For more information on our water-related projects, and a description of this year's project, please see the Water section on page **84**.*

Additionally, since 2016, our Animal Health business has prioritized habitat restoration through a continued partnership with WeForest. In total, more than 120 hectares of land have been restored by planting over 211,000 trees in countries like Brazil, India, Malawi, Tanzania and Zambia. These projects have reconnected forest fragments through the restoration of wildlife corridors; protected sensitive ecosystems and wildlife; improved riparian water ways; created local jobs; and transitioned private land to sustainable agroforestry systems.

*For more information about this initiative, visit **Animal Health and WeForest Initiative**.*

Waste

We continuously evaluate our sites' waste disposal methods to gain a better understanding of our network, as well as to identify risks and opportunities in our value chain. The proper management of waste from our facilities is important to the communities in which we operate and is a focus of our environmental permits and other regulatory requirements.

5%

Reduction in global landfill waste since 2021

31%

Reduction in total waste generation at our largest hazardous waste-generating site in 2023

Goals	2023
No more than 20% of our global operational waste will be sent to landfills and incinerators (without energy recovery) by 2025.	15%
At least 50% of our sites will send zero waste to landfills by 2025.	55%

Policies

- Pharmaceuticals in the environment
- Responsible disposal of medicines
- Business Partner Code of Conduct
- Respect for Environmental Health and Safety
- Sharps Management Plan - CalRecycle

GRI/SASB disclosures in this section:

GRI 306 GRI 306-1 GRI 306-2 GRI 306-3 GRI 306-4 GRI 306-5

*For more info on disclosures, see the **Reporting indices**.*

Our approach to waste

Our Waste Prevention and Management standard requires our facilities to comply with applicable generation, management and disposal regulations and standards. Each site is responsible for managing its approach to waste. The Environmental Compliance CoE and Environmental Sustainability CoE review environmental data to monitor sites' progress. Above-site teams from across the Company provide assistance as needed to support sites' work toward meeting our goals.

To minimize our environmental footprint and align with the UN SDGs, we look for opportunities to avoid the use of hazardous materials, to reuse or recycle materials and to prevent the generation of waste. When prevention, reuse and recycling are not practical or feasible, we apply controls and treatment technologies to prevent human health impacts and minimize environmental impacts.

70%

Diversion of non-hazardous waste generated at two of our largest sites from landfills since 2021

Operational waste

The amount of waste we generate reflects the efficiency of our manufacturing processes.

Operational waste is primarily generated from the following activities:

- Manufacturing
- Packaging
- On-site wastewater treatment
- Research

Waste minimization begins with the evaluation of our product designs and manufacturing processes. Through our Green & Sustainable Science program (see Materials section on pages **96-100**), we design processes that use safer chemicals, consume less energy, use less water and other resources, and generate less waste. Our process development biologists, chemists and engineers have the expertise to create more sustainable ways to make our products.

We continuously strive to reduce the amount of operational waste we generate and to maximize the use of environmentally beneficial disposal methods such as recycling, composting and waste-to-energy. To ensure our waste is managed in an environmentally responsible manner, we use only approved waste disposal facilities. Approved facilities demonstrate that they have the systems, technologies and practices to manage our waste streams responsibly and in compliance with applicable requirements. We routinely audit these facilities to verify the acceptability of their systems and practices.

Waste types are defined differently in various parts of the world. For this report, we have divided our operational waste into two categories:

- Hazardous waste—Highly regulated or high-risk waste streams that need to be neutralized, treated or destroyed to address a particular hazard, such as toxicity, flammability, corrosivity, radioactivity, pharmaceutically active or infectious
- Non-hazardous waste—Includes all other operational waste

Non-operational waste, such as construction and demolition debris, is excluded from reporting as it is not directly associated with the production of our products and services.

Impacts to recycling markets are still being felt following the enactment of legislation in a number of countries in Asia several years ago, restricting the acceptance of solid waste from other countries. Historically, a large percentage of recyclable waste collected in the U.S. has been shipped to Asia for recycling. Accordingly, this change had, and continues to have, the potential to affect the percentage of our non-hazardous waste sent for recycling. Commodity and trade markets continue to fluctuate but have had minimal impact on our recycling rates historically and in the past year. The amount of our non-hazardous waste sent for recycling decreased by two percentage points from 2022 to 2023.

In many cases, we partner with our third-party Integrated Facility Management (IFM) team to manage site waste and work toward realizing waste goals. Since 2021, we placed a strategic focus on diversion improvements at sites that generate the most waste going to landfill and incineration without energy recovery.

In 2023, two of our largest sites sending non-hazardous waste to landfills continued to implement diversion strategies to reduce the volume of waste going to landfill. Since they began these efforts in 2021, these sites have reduced waste going to landfill by an average of 70 percent. In 2023, our largest generator of hazardous waste reduced its volume of hazardous waste generation by 31 percent. These reductions were a result of process improvements at the site, including improving the operation of a steam stripping system.

Value chain waste

Potential waste-related impacts are also associated with upstream activities, such as external manufacturing of active ingredients, the purchase of raw materials and goods, and the return of off-spec product. Similarly, there are downstream impacts from the packaging and waste generated from use of our products.

While we may not have full operational control over the waste generated in our value chain, we pursue various initiatives to reduce the impact through our product and material choices. Some of these waste reduction initiatives across our value chain include:

- Eliminating substances of concern from packaging
- Solvent recovery and beneficial reuse
- Packaging design efficiency
- Reusable shippers (in product distribution)

*For more information on value chain waste reduction initiatives, refer to the Materials section on pages **96-100**.*

According to our **Business Partner Code of Conduct**, our partners operate in an environmentally responsible and efficient manner to minimize adverse impacts on the environment. Partners are encouraged to conserve natural resources, to avoid the use of hazardous materials where possible and to engage in activities that reuse and recycle.

*For more information on our environmental management with suppliers, please see page **118**.*

Global operational waste (% of total waste)[1,2]	2019	2020	2021	2022	**2023**
Incinerated (without energy recovery)	19%	23%	28%	12%	**10%**
Landfilled	7%	5%	5%	4%	**5%**
Total (2025 Goal <20%)	26%	28%	33%	16%	**15%**

[1] The initial waste treatment facility is defined as the generator of record for the waste generated from the treatment of an operational waste stream shipped from a company. Therefore, to be consistent with the definition for "generator of record," we do not track operational waste beyond the initial waste treatment facility.

[2] In 2022, new information specific to the technology used for the generation and use of energy at the disposal facility to which our largest hazardous waste stream is sent was identified. The waste directed to this disposal technology was previously classified as incineration without energy recovery, but with this updated information it has been reclassified as incineration with energy recovery as per our internal definitions. The data for reclassification are not readily available prior to 2022 and therefore could not be updated.

Hazardous waste (Mt)[1-3]	2019	2020	2021	2022	**2023**
Recycled	8,034	8,685	9,824	6,878	**7,735**
Energy recovery	13,655	15,330	14,029	28,964	**23,173**
Composted	0	0	0	0	**0**
Landfilled	938	198	315	92	**100**
Other	1,865	1,662	2,824	2,814	**2,220**
Reused	1,147	480	1,510	683	**643**
Incinerated (without energy recovery)	14,025	16,649	22,086	9,109	**6,085**
Total	39,674	43,004	50,588	48,540	**39,957**

[1] The initial waste treatment facility is defined as the generator of record for the waste generated from the treatment of an operational waste stream shipped from a company. Therefore, to be consistent with the definition for "generator of record," we do not track operational waste beyond the initial waste treatment facility.

[2] In 2022, new information specific to the technology used for the generation and use of energy at the disposal facility to which our largest hazardous waste stream is sent was identified. The waste directed to this disposal technology was previously classified as incineration without energy recovery, but with this updated information it has been reclassified as incineration with energy recovery as per our internal definitions. The data for reclassification are not readily available prior to 2022 and therefore could not be updated.

[3] All values above are rounded. As a result, the total values shown may not equal the sum of the individual source totals.

Approximately 19 percent of our hazardous waste was sent off site for recycling and was either returned to us for reuse or sold to other industries. This is a 5 percentage point increase from 2022. While we anticipated a reduction in solvent waste sent for recovery due to the expected closure of one of our locations, we actually saw an overall increase because of production changes at another facility that generated large volumes of solvent waste subsequently sent for recovery. Another 58 percent of hazardous waste was combusted for energy recovery, down 2 percentage points from 2022. About 15 percent of the total hazardous waste generated was incinerated without energy recovery, down 4 percentage points from 2022. Less than 1 percent was sent to hazardous waste landfills.

In 2023, 20 percent of our non-hazardous waste was composted, a 4 percentage point increase from the previous year. This increase is attributed to a new waste stream generated for the first time in 2023 that is managed via composting. Approximately 37 percent of our non-hazardous waste was sent off site for recycling, a decrease of 2 percentage points from 2022. Another 25 percent was combusted for energy recovery, down 4 percentage points from 2022. The decrease in the percentage of non-hazardous waste being combusted for energy recovery can be attributed to the discontinuation of a production line at one of our manufacturing facilities that generated a large volume of waste managed in this manner.

About 3 percent of the total non-hazardous waste generated was incinerated without energy recovery (unchanged from 2022), and 11 percent was sent to non-hazardous waste landfills, up 1 percentage point from 2022.

In 2023, we managed 74,320 metric tons of waste from our operations, an 11 percent decrease from 2022. Of this total, 39,957 metric tons were hazardous waste. Of the hazardous waste we generated in 2023, 79 percent was beneficially reused (reused, recycled, composted or combusted with energy recovery), up 4 percentage points from 2022.

We beneficially reused 85 percent of the 34,364 metric tons of non-hazardous waste we generated in 2023. We are evaluating and refining the programs at our manufacturing, research and office sites to reduce waste generation and increase recycling.

Approximately 55 percent of our facilities sent zero operational waste to landfill in 2023, an increase from 2022.

The overall percentage of waste sent to landfill increased by 1 percentage point from 2022. We continue to identify alternate methods of waste management that will reduce the amount of waste sent to incinerators (without energy recovery) and landfills.

Non-hazardous waste (Mt)[1,2]	2019	2020	2021	2022	**2023**
Recycled	14,188	13,537	13,073	13,668	**12,840**
Energy recovery	10,030	8,280	7,066	10,115	**8,620**
Composted	4,843	4,892	5,872	5,672	**6,948**
Landfilled	4,603	4,061	3,702	3,643	**3,719**
Other	1,025	1,717	266	121	**486**
Reused	660	963	583	693	**751**
Incinerated (without energy recovery)	477	1,124	850	881	**1,000**
Total	35,826	34,574	31,412	34,793	**34,364**

[1] The initial waste treatment facility is defined as the generator of record for the waste generated from the treatment of an operational waste stream shipped from a company. Therefore, to be consistent with the definition for "generator of record," we do not track operational waste beyond the initial waste treatment facility.

[2] All values above are rounded. As a result, the total values shown may not equal the sum of the individual source totals.

Total waste (Mt)[1-3]	2019	2020	2021	2022	**2023**
Recycled	22,222	22,222	22,897	20,546	**20,575**
Energy recovery	23,685	23,610	21,095	39,079	**31,793**
Composted	4,843	4,892	5,872	5,672	**6,948**
Landfilled	5,541	4,259	4,017	3,735	**3,819**
Other	2,890	3,379	3,090	2,935	**2,706**
Reused	1,807	1,443	2,093	1,376	**1,394**
Incinerated (without energy recovery)	14,512	17,773	22,936	9,990	**7,085**
Total	75,500	77,578	82,000	83,333	**74,320**

[1] The initial waste treatment facility is defined as the generator of record for the waste generated from the treatment of an operational waste stream shipped from a company. Therefore, to be consistent with the definition for "generator of record," we do not track operational waste beyond the initial waste treatment facility.

[2] In 2022, new information specific to the technology used for the generation and use of energy at the disposal facility to which our largest hazardous waste stream is sent was identified. The waste directed to this disposal technology was previously classified as incineration without energy recovery, but with this updated information it has been reclassified as incineration with energy recovery as per our internal definitions. The data for reclassification are not readily available prior to 2022 and therefore could not be updated.

[3] All values above are rounded. As a result, the total values shown may not equal the sum of the individual source totals.

Materials

Meeting our environmental sustainability goals is intrinsically linked to the application of innovative, cost-efficient manufacturing processes with low environmental impact. We see transformative science/engineering and innovation as critical enablers to developing sustainable, low-cost manufacturing processes that provide environmental and economic benefits over the lifecycle of our products.

Our aim is to develop the most efficient and sustainable processes at product launch, with the goal of minimizing material use and waste from our commercial manufacturing. We use an innovative “green-by-design” development strategy to progress from an initial early clinical supply route to a fully optimized and sustainable commercial manufacturing process.

GRI/SASB disclosures in this section:

GRI 301

*For more info on disclosures, see the **Reporting indices**.*

Policies

Responsible Disposal of Medicines

External charters, principles and initiatives that we endorse or guide our work on this topic:

- Eco-Pharmaco-Stewardship (EPS) initiative
- Conference Board: Product Stewardship & Regulatory Affairs Council
- ACS Green Chemistry Institute Pharmaceutical Roundtable (ACS GCIPR)

Our approach to materials

By using more efficient and innovative processing methods and technologies, we are reducing the amount of energy, water and raw materials we use to make our products, thereby minimizing the amount of waste we generate. We go to great lengths to ensure our products are designed and made in a safe, effective and environmentally sound manner.

We deliver on this commitment by maintaining a highly trained and capable scientific staff, and by actively pursuing manufacturing process improvements that minimize environmental impacts. We have set environmental sustainability goals with concrete targets and timelines to demonstrate this commitment. To ensure our knowledge stays current with that of thought leaders and experts in the industry, we also collaborate with external resources and industry groups such as the American Chemical Society (ACS), the EFPIA and Animal Health Europe (AHE).

Products

We conduct extensive testing of our products to identify and understand any potential safety, health or environmental hazards. We manage and communicate information about hazardous materials to keep our employees, contractors, transporters and other partners safe. We also share information with patients and health care professionals through our product inserts and packaging so they can understand the potential hazards when handling our products.

We actively engage in conversations on product stewardship to understand and act on issues specific to our industry worldwide. We share best practices within the industry via our membership in the Conference Board Product Stewardship Council, EFPIA, the International Federation of Pharmaceutical Manufacturers & Associations (IFPMA), and the ACS Green Chemistry Institute Pharmaceutical Roundtable (ACS GCIPR). Our objective is to maintain compliance and assure supply of lifesaving products as we look to further minimize our environmental footprint.

We also support the development of science-based, cost-effective and environmentally sound programs that promote the proper disposal of unused medicines and their packaging, in accordance with regional requirements.

Governance

Our efforts in this area are driven by our Green and Sustainable Science Team and overseen by research and development (R&D) leadership and our Environmental Health and Safety (EHS) Council.

Programs and initiatives

Our chemists and engineers are trained in green design principles and are provided with tools and resources to help them develop manufacturing processes that use safer chemicals and reduced quantities of raw materials. We use innovations like nanotechnology to make our products more effective, while ensuring that patient safety always remains of utmost importance.

Complying with chemical substance and product requirements is a top priority for us. We track numerous existing and emerging chemical control regulations that require us to register specific types of chemicals with the proper authorities. To meet these requirements, our scientists complete environmental and human health risk assessments of the substances with which we work before submitting the required regulatory notifications. Additionally, we provide details on product use and risk-based control measures in accordance with applicable regulations.

Packaging

Our product stewardship program extends to our customers and patients through the design of effective, low-impact product packaging.

These packaging materials serve a range of important purposes; the foremost is to protect the purity, efficacy and physical integrity of the products that reach our patients.

Packaging also helps ensure our products are used safely, conveniently and with adherence. Prescribing and educational information is conveyed at the point of purchase, and packaging can include child-resistant access, tamper-evident features and anti-counterfeiting features.

In addition to these critical packaging functions, we recognize the environmental impact of our packaging. After it has served its critical functions, packaging becomes our patient or caregiver's waste and therefore must be accounted for.

We are actively re-imagining our approach to reducing the environmental impact of our packaging. We have developed an iterative, long-term roadmap that is integrated into our business processes. This roadmap drives projects aimed at reducing the environmental impact of our packaging.

A foundational part of our path forward includes evolving how we measure and maintain packaging data to enable transparent, data-driven decision making. This includes:

- Reducing packaging material mass
- Minimizing or eliminating materials of concern
- Researching new materials
- Introducing more recycled content into our packaging
- Increasing the recyclability of our packaging systems

We use a simplified lifecycle analysis tool as a standard business practice. We review all new human health packaging designs during the development process to understand and minimize their environmental impacts as much as possible, while still providing appropriate protection for our products.

We continue to monitor global trends, respond to customer inquiries around packaging and packaging materials, and incorporate circular economic concepts into the critical functions of packaging for pharmaceuticals.

Packaging governance

Environmental packaging is managed by our Global Pharmaceutical Commercialization and Global Pharmaceutical Operations areas with oversight from our Environmental Health and Safety Council.

Animal Health packaging

A project initiated by our Animal Health business is an example of our continued commitment to environmental sustainability. The project, conducted in Germany and Austria, replaced single-use cardboard boxes with reusable "green" boxes for shipping pharmaceutical products to customers in those countries.

When compared to the single-use corrugated boxes, the reusable boxes significantly reduced the environmental impacts associated with the packaging materials and contributed to a more sustainable supply chain. Looking ahead, we are exploring the potential to expand this project to other countries and regions. By sharing our successful experience and promoting the adoption of reusable packaging solutions, we aim to further enhance sustainability practices within the animal health and human health industry.

Lastly, Animal Health's SPHEREON® vaccines are produced and shipped in freeze-dried pellets, saving packaging and energy in shipping.

In 2023, we responded to the CDP Forest questionnaire for timber products, specifically for paper and secondary and tertiary packaging. CDP graded our disclosure with a C- "Awareness" rating.

We performed a gap assessment of our questionnaire response and developed a roadmap for improvements in this area over the next several years. We are in the early stages of our program development and are in the process of assessing the impact of other forest-risk commodities.

Solvent use

Solvents can play a key role in the research and manufacturing of our products as well as in equipment cleaning. Because of their significance to our business and the lifecycle impact they represent, we focus on designing our processes to minimize or avoid the use of organic solvents where practical. Where we do use organic solvents, we maximize efficiency and control them in our emissions, effluents and waste.

We have an active Green and Sustainable Science program to design our new processes using fewer, less toxic organic solvents and other hazardous materials, and to reuse and recycle more of the solvents we do use.

For cleaning our manufacturing equipment, we use water-based methods where they are as effective as organic solvents. At each of our manufacturing sites, we have engineers who are responsible for identifying and driving process improvement projects. When it is not practical to reuse regenerated organic solvents in our own production processes, we work with suppliers who recover the spent organic solvents for resale to other industries or safely burn them as a source for energy, where feasible. Any used organic solvents that leave our site as hazardous waste are managed at off-site facilities that are on our list of approved waste management sites.

Chemical management

A comprehensive and effective chemical management program is critical to the safety and protection of our employees, the communities in which we operate, and the environment.

We have put in place procedures, systems and processes to manage the approval, procurement, inventory, receipt, transfer, storage, use and disposal of chemicals at all of our sites. Through proper labeling of chemicals and the safety data sheets, we provide our employees and others with information about the identities and potential hazards of the chemicals in our operations.

Green and sustainable science

Green and sustainable science is the development and application of green chemistry principles, 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 and cost-efficient manufacturing processes with low environmental impact. Green and sustainable commercial chemical route development also helps to mitigate potential issues in the supply chain of tomorrow by reducing our raw material requirements today. Our objective is to be the industry leader for the development of innovative, efficient, green and sustainable commercial syntheses of our small molecule APIs from sustainable commodity raw materials. We are also exploring ways to reduce the environmental impact of biologics and vaccine manufacturing.

Green-by-design Strategy

Our integrated strategy involves several stages; it aims to provide innovative solutions rather than incremental improvements to historical practices. We see transformative science/engineering and innovation as critical enablers to developing sustainable, low-cost manufacturing processes that provide both environmental and economic benefits over the lifecycle of our products. We aim to develop the most efficient and sustainable processes

at product launch, with the goal of minimizing material use and waste from our commercial manufacturing. We use an innovative "green-by-design" development strategy to progress from an initial early clinical supply route to a fully optimized and sustainable commercial manufacturing process.

Programs and initiatives

As part of our Green & Sustainable Science program, we calculate the process mass intensity (PMI) of our small molecule human health products. PMI represents the number of kilograms of raw materials (including water) used to produce one kilogram of an API and indicates the efficiency by which we convert raw materials into final products. We use this metric internally to compare different manufacturing methods, to identify process improvement opportunities and to track our progress.
We have developed a PMI tool that provides ambitious, molecule-aware PMI targets for our API manufacturing processes. We routinely evaluate PMI at every stage to drive the development of our new small molecule processes to achieve our aspirational goals for green and sustainable processes. For our large-molecule processes, we are pioneering new modality-appropriate metrics that outperform PMI in their ability to recommend ways of reducing the environmental impact of biologic and vaccine manufacturing. We are also using streamlined lifecycle analysis tools to further evaluate the environmental impacts of our processes.

American Chemical Society's (ACS) Green Chemistry Institute

We are a founding member of the ACS Green Chemistry Institute® (GCI) Pharmaceutical Roundtable, a partnership between the ACS GCI and member pharmaceutical companies. The Roundtable drives education and research on new ways to apply green and sustainable science to pharmaceutical discovery and manufacturing. This is accomplished through the development of industry-wide sustainability metrics, tools and technologies.

Awards and recognition in green chemistry

Since the establishment of the Green Chemistry Challenge Awards sponsored by the Environmental Protection Agency (EPA) and the ACS in 1996, we are proud to have been recognized with nine Green Chemistry Challenge Awards for innovative process improvements, six since 2017. We have also been honored by ACS as the winner of the Peter J. Dunn Award for Green Chemistry & Engineering Impact in the Pharmaceutical Industry for three of the past four years.

*Learn more about the Green Chemistry Awards and how we are **safeguarding the environment through green chemistry** on our corporate website.*

Ethics & Values

Our stakeholders trust us to act with integrity, and it is imperative we uphold that trust. We build trust by putting patients first and operating responsibly to help enable a safe, sustainable and healthy future for people and communities everywhere.

Our strong commitment to ethics and integrity is the bedrock of our Company and enables us to fulfill our purpose. Our policies and procedures reinforce that commitment, from how we conduct research and development (R&D) and the management of our supply chain to the production of available and affordable products.

In addition, our workforce is united by four key values that represent who we are and how we work together as a company: Patients first, Respect for people, Ethics and integrity, and Innovation and scientific excellence.

24/7

Availability of our MSDethics.com reporting tool, which allows employees and third parties to raise concerns confidentially and anonymously (where permitted by law)

$3.6 billion

Spending with small and diverse Tier 1 and 2 suppliers globally in 2023

Topics covered:

Ethical corporate behavior

Customer health and safety

Supply chain

Human rights

Privacy and data security

Government relations

Ethical corporate behavior

We operate with the highest standards of ethics and integrity. We are committed to fostering a culture where employees feel safe and are empowered to speak up. By putting our ethics and values at the foundation of everything we do, we fortify our commitment to ethical corporate behavior.

Goal	2023
Foster a "Speak Up" culture by maintaining or exceeding our current percentage of global employees responding favorably to the "Willingness to report" question in an internal survey as an annual average, by 2025.[1,2]	**On Track**

[1] Favorable response indicates the percentage of respondents who respond "yes" to the question stating, "I am willing to report employee misconduct and potential ethics or compliance issues."

[2] In 2021, we developed the "Willingness to Report" question referenced in footnote 1 to align with evolving best practices. This question was first included in an internal survey in March 2022, and 2022 data are used as the baseline against which 2023 data are compared.

GRI/SASB disclosures in this section:

GRI 2-26 GRI 205 GRI 205-2 GRI 206

*For more info on disclosures, see the **Reporting indices**.*

Policies

Code of Conduct

Our Culture and Values

External charters, principles and initiatives that we endorse that guide our work on this topic:

- European Federation of Pharmaceutical Industries and Associations (EFPIA) Code of Practice
- International Federation of Pharmaceutical Manufacturers & Associations (IFPMA) Code of Practice
- International Labor Organization Core Labor Standards
- Organisation for Economic Co-operation and Development Guidelines for Multinational Enterprises
- Pharmaceutical Supply Chain Initiative (PSCI) Principles for Responsible Supply Chain Management
- PhRMA Code on Interactions With Health Care Professionals
- Ten Principles of the UN Global Compact
- UN Guiding Principles on Business and Human Rights
- UN Universal Declaration of Human Rights

Our approach to ethical corporate behavior

Our code of conduct

In 2023, we released the latest edition of our **Code of Conduct**, which marked a significant milestone in our efforts to support our employees' values-based decision making. With its refreshed design and discussion of important issues, this new edition continues to empower our employees to uphold our ethical standards in their day-to-day work. By offering both digital and PDF formats in 21 languages, we ensure our Code of Conduct is easily accessible to all, regardless of their language and technological preferences.

In addition to being a helpful guide for navigating complex situations, the new edition encourages employees to speak up and report concerns.

*Please visit our corporate website for more information on our **Code of Conduct**.*

Addressing ethics- and compliance-related concerns

The Ethics & Compliance Office serves as a channel for the receipt, triaging and redress of ethics- and compliance-related concerns. Depending on the nature of a concern, it will be addressed by appropriate members of the Ethics & Compliance Office, the Office of General Counsel, Global Security or Human Resources (HR).

We encourage and empower employees to raise concerns to their management, HR, Legal, Compliance, the Ethics & Compliance Office, or by using the Speak Up Tool at msdethics.com. The Speak Up Tool is operated by an independent third party and is available 24/7. MSDethics.com allows employees and suppliers to raise concerns or ask questions confidentially and anonymously (where permitted by law) in their preferred language via telephone or online. Retaliation against employees who report concerns is a violation of corporate policy and is strictly prohibited.

We maintain a fulsome process for escalation and investigation of potential ethics- and compliance-related concerns. The process ensures we promptly and discreetly investigate all reports of conduct that could violate our policies, values or standards.

If allegations of misconduct are substantiated, appropriate remediation and disciplinary actions are taken to ensure those responsible are held accountable and recurrence is prevented. Subject to local law, disciplinary actions can include, but are not limited to, dismissal, issuance of final written warning letters or financial penalties. In addition, we take appropriate steps to address any needed improvements in organizational and process controls.

Subject to local law, we also have the discretion to reduce incentive payments made to employees in certain instances of misconduct that result in a material policy violation.

Fostering a culture of speaking up

The Ethics & Compliance Office is responsible for managing our global Speak Up program, which involves a range of educational campaigns and communication activities throughout the year. These initiatives encourage and promote a culture of speaking up. They also raise awareness of the available channels for reporting potential concerns as well as the process that's followed once a concern has been reported.

It is our priority to protect and enhance our reputation through safe, ethical and compliant behaviors. In alignment with that priority, and to foster a strong culture of ethics and compliance, the Ethics & Compliance Office partners with a network of site-based, volunteer ethics ambassadors outside of the U.S. The ambassadors play a crucial role in supporting the Speak Up program by addressing employee questions about our reporting and investigation process while actively promoting a culture of speaking up.

Ethics and integrity culture building

We believe in fostering trust, promoting open communications, and encouraging employees to speak up. To reinforce this commitment, in 2023, we conducted a series of listening sessions at several of our Animal Health manufacturing sites in Germany, Austria, Spain and New Zealand. These sessions served as a platform for employees to express their thoughts and concerns, ultimately strengthening our Speak Up culture and establishing closer connections between employees and management.

Following the listening sessions, our ethics team collaborated with the respective leaders to develop action plans aimed at further enhancing the organization's Speak Up culture. This initiative is fully aligned with our Strategic Framework, supporting our priority to "invest in the growth, success and well-being" of our people. The program also meshes with our employee sustainability goals by helping build diverse and inclusive team cultures while nurturing employee trust and engagement.

Ethics and compliance training

Training is an important part of creating a strong ethics and compliance culture, and we are dedicated to ensuring all employees have a comprehensive understanding of our expectations and principles. We assign our Leading With Ethics & Integrity training series annually. The goal of this training series is to empower employees to act with integrity and to make values-based decisions.

In 2023, more than 99 percent of our employees completed the assigned Ethics & Integrity training series that included topics such as Code of Conduct, speaking up, conflicts of interest, privacy and anti-bribery and anti-corruption.

We also provide supplemental training on anti-bribery and anti-corruption for employees who engage with non-U.S. government officials. Employees in the Human Health division in the U.S. are also required to understand, among other things, their responsibilities under the Anti-Kickback Statute, the U.S. Prescription Drug Marketing Act and applicable U.S. Food and Drug Administration (FDA) promotional regulations.

Ethics and integrity training	2019	2020	2021	2022	**2023**
Employees trained on the Leading With Ethics & Integrity training series	99%	>99%	>99%	>99%	**>99%**

Annual ethics and policy certification

An important component of our corporate ethics and compliance program is our annual ethics and policy certification process. Annually, certain employees are required to disclose certain outside activities, interests and close personal relationships that could present potential conflicts of interest. Where we identify potential conflicts of interest, the Ethics & Compliance Office works with the employee and management to mitigate any risks.

In addition, as part of this annual process, those employees are also required to certify compliance with our corporate policies on preventing bribery and corruption and on antitrust law compliance, conflicts of interest and insider trading. U.S.-based (including Puerto Rico) employees must also indicate whether they are subject to an investigation of an agency of the U.S. government or identified on any list of prohibited or restricted parties issued by an agency of the U.S. government in keeping with our policy on the effects of exclusions, debarments, suspensions and health care-related criminal convictions, reporting and screening.

Anti-corruption

Our reputation for ethics and integrity is the foundation of our relationship with health care professionals, patients and other stakeholders. Bribery and corruption are illegal, tarnish a company's reputation and undermine public trust.

We adhere to applicable anti-corruption laws and regulations, including the Foreign Corrupt Practices Act and the UK Bribery Act.

Our anti-corruption policy prohibits the offer, promise, or giving of any payment or benefit—transfer of value (ToV) to or for the benefit of—an individual or entity for the purpose of improperly influencing decisions or actions with respect to our business. The policy applies to ToV in connection with direct engagements (i.e., those we conducted) and indirect engagements (i.e., those managed through a third-party intermediary or partner). The policy applies to ToV offered, promised or provided to private and public officials.

Divisional policies anchor to our corporate anti-corruption policy and reinforce the principles for certain higher-risk activities involving ToV to government officials outside of the U.S. They also establish the systems and processes for conducting appropriate pre-engagement anti-corruption due diligence.

Our **Business Partner Code of Conduct** presents similar and consistent anti-corruption principles for our partners. It states that business partners shall not offer to pay, ask for or accept anything of value—or give the appearance that they do—in order to improperly influence decisions or actions with respect to our business or government activities. We expect all of our business partners to adhere to these principles and to operate in full compliance with the Business Partner Code of Conduct.

Anti-competitive behavior

We believe our customers—and society as a whole—benefit from fair, free and open markets. While ours is a competitive industry where it is important to compete aggressively, it is equally important we do so fairly, legally and based on the merits of our products and services.

Our interactions with customers, suppliers and competitors are governed by antitrust and competition laws, which we supplement with a corporate policy addressing antitrust and competition issues.

We recognize that our reputation for integrity, trust, honesty and fair dealing is dependent on fair competition. Consequently, we want to make certain that the ways we promote customer choice, business relationships and business practices are appropriate. Our policies guide our employees to recognize that competitive advantage is gained through the merits of our products and services, never through unethical or illegal anti-competitive business practices.

Fostering pro-competitive practices

We believe our commercial teams make an important contribution to supporting appropriate access to our approved products by informing our customers of options based on approved promotional content, consistent with applicable regulatory laws.

We adhere to external laws, regulations and industry codes of conduct, as well as to our global Code of Conduct, our corporate policies and procedures, and our ethics and compliance program.

Our ethics and compliance program addresses and seeks to prevent inappropriate practices. Our practices are monitored, and we address noncompliance to ensure our interactions with customers and consumers do not include unsubstantiated competitive claims.

Employee training

All new employees receive training on our relevant policies and ethical operating standards. Our sales representatives, for example, must complete sales and product training. Training is specific to the country where employees are based and covers the scope of their responsibilities in ensuring compliance with applicable laws and regulations. Regardless of location, our trainings emphasize that if employees are unsure about the appropriateness of any conduct, they should ask for help. There are several places where employees can turn for assistance.

The first option is to talk with their managers, and if they do not feel comfortable doing so, they may contact:

- Divisional Compliance departments
- Office of General Counsel, including the Ethics & Compliance function
- HR department
- MSDethics.com

In addition to mandatory training on our Code of Conduct, employees also receive compliance training according to their roles and responsibilities. We also periodically evaluate and update the content for marketing and sales training to ensure it remains relevant and current.

Customer health and safety

Quality and safety are of paramount importance to us, which is why we have a variety of policies and procedures to help protect the health and safety of our customers. Whether it is in our manufacturing processes, how we run our clinical trials or how we monitor for counterfeit products, we have a commitment to sustained quality and compliance excellence in everything we do.

In a highly complex and ever-changing regulatory landscape like the one we operate in, we must be proactive in managing risk and protecting the integrity of our products, which include using the latest technologies and collaborating with regulatory authorities.

GRI/SASB disclosures in this section:

GRI 416	GRI 416-2	GRI 417	GRI 417-1	SASB 210a.1	SASB 250a.3	SASB 260a.1
SASB 260a.2	SASB 260a.3	SASB 270a.2				

*For more info on disclosures, see the **Reporting indices**.*

Our approach to customer health and safety

Our quality strategy is focused on maintaining sustained quality and compliance excellence through focused digital technologies, effective oversight and risk mitigation, engaged and empowered colleagues and communities, and a mature quality management posture. Our strategy is a key enabler of ensuring patient safety and the quality and continuous supply of our products.

Patient health and safety

Clinical trial site monitoring, design, conduct and oversight

We have a longstanding commitment to sharing the results of our clinical trials, regardless of their outcome, in a timely manner. If a clinical trial of a product is terminated early for safety reasons, we promptly disclose medically important information to regulatory authorities and the public, update the status on www.clinicaltrials.gov within 30 days, and submit a manuscript to a journal (or post a summary online) within 12 months after the last patient's last visit occurs. If the trial was terminated for efficacy reasons, the results will be disclosed within 12 months after the last patient's last visit occurs.

Summaries of terminated trials provide information about patient disposition, safety and adverse experiences, as well as an explanation as to why the trial was terminated early. We comply with all applicable laws and regulations associated with the registration of clinical trials in publicly accessible registries and subsequent posting of the results from these trials. We have also put in place processes for compliance with the FDA Amendments Act of 2007, the European Union Clinical Trials Regulation No 536/2014 (EU-CTR), and Clinical Trials Regulation (Regulation EU NO 536/2014) including those related to clinical trial registration and posting results.

For those who analyze, report or publish the results of clinical trials, a clinical trial registry also provides information on trials in progress and the ability to track such trials over the course of development. Company-sponsored and -conducted clinical trials involving patients assigned to treatment with investigational and marketed products are registered at trial initiation on **ClinicalTrials.gov**, **EUclinicaltrials.eu** and **ENCePP.eu**.

In accordance with our **public policy position statement on clinical trial ethics**, all investigational studies in human subjects are conducted in a manner consistent with applicable laws, regulations and guidelines for the protection of human subjects, including those issued by the International Council for Harmonisation: Good Clinical Practice (ICH-GCP).

However, individual country regulations and guidelines remain the primary determinant of specific requirements for the conduct of medical research. In all regions, we have a commitment, where appropriate, to the study of diverse patient populations, including underrepresented groups, women and children. As a result, we strive to obtain information which ensures a thorough evaluation of the safety and efficacy of our medicines and vaccines. These efforts allow us to seek regulatory approvals throughout the world and thereby offer our medicines globally to patients who need them.

When appropriate, a data monitoring committee (DMC) reviews unblinded data from ongoing trials in a pre-specified, scientifically acceptable manner. The goals of the DMC are to protect the safety of trial participants and to assess whether the risk/benefit profile is favorable. The DMC's recommendations are communicated internally to relevant scientists and can be distributed externally to clinical investigators, review boards or regulatory agencies, as appropriate.

*Please visit the **U.S. Food & Drug Administration's (FDA) MedWatch** website for more information on product safety alerts. You may visit the **FDA's Adverse Event Reporting System (FAERS)** website for up-to-date information on fatalities associated with product use.*

*For more information on our approach to the diversity of patients in clinical trials, please see page **27** in the Access to Health section of this report. For more information on clinical trials in general, please visit the **Clinical Trials page** on our corporate website.*

GCP/pharmacovigilance (PV) inspections	2019	2020	2021	2022	**2023**
GCP/PV inspections by regulatory agencies of the Company or clinical trial investigators that led to significant fines, penalties, warning letters or product seizures[1]	0	0	0	0	**0**

[1] There were 9 GCP sponsor inspections and 6 PV inspections in 2023.

Marketing and labeling

Our chief medical officer (CMO) holds overall responsibility for defining the benefit/risk profile of each of the Company's pipeline and marketed products. The CMO also provides medical oversight for all clinical programs, supervises the development and implementation of medical policies (including those related to data transparency and the sharing of clinical data), and has authority over the design, execution, and implementation of expanded access ("compassionate or early use") programs. The CMO is also the Company's principal medical spokesperson.

Our chief safety officer is responsible for determining the Human Health product risk profile, and for overseeing the safety of our Human Health products. Our Global Clinical Safety and Pharmacovigilance function, led by the chief safety officer, manages a global system for the collection, review and reporting of adverse events (AEs), and for the continuous assessment of product safety.

The Animal Health vice presidents in R&D (pharmaceuticals/biologics) hold joint responsibility for the risk-benefit determination for our Animal Health pipeline and marketed veterinary medicinal products (VMPs), and oversee all Animal Health clinical programs.

Clinical safety and risk management

The Clinical Safety and Risk Management organization leads the Risk Management Safety Team for all Human Health candidates and products, from the beginning of Phase 2b through the end of a product's lifecycle. Clinical Safety and Risk Management is responsible for the development of proactive clinical safety risk management strategies, including the Risk Management Plan, which is a regulatory requirement in many countries for marketed drugs and vaccines.

Consistent with applicable FDA regulations as well as those of relevant health authorities around the world, the labels in our product packaging contain information about adverse reactions and other potential risks that are either serious or otherwise clinically significant. We include contact details in our product packaging and on our corporate website for patients, human and animal caregivers, farmers and producers, and human and animal health professionals to report AEs in the U.S. Outside the U.S., AEs are reported in accordance with additional local country laws and practices.

There are occasions when, in consultation with regulatory authorities, we may determine that it is important to communicate new or updated information promptly to health care professionals involved in prescribing or dispensing a drug, or in caring for patients who receive a drug. In these situations, we work with regulatory authorities to communicate this information to health care professionals in a timely manner so they can inform patients through appropriate mechanisms.

Product label reviews

The ongoing monitoring of our product labels is a major focus of our safety efforts. Our label review teams monitor information on our products and work with our product Risk Management Safety Teams to develop or update product labeling. We regularly communicate relevant information to regulatory authorities worldwide.

Health literacy

Health literacy is essential to our overall strategy. We incorporate health literacy into all aspects of a product's development and lifecycle, from clinical testing to labeling and packaging to patient education. In 2020, the internal Health Literacy Community of Practice (CoP), with membership from different nations and various corporate divisions, was founded. The mission of the CoP is to champion health literacy across the enterprise and to improve the patient experience by making information accessible, understandable and informative.

This CoP was established to assist in identifying and organizing health literacy advocates with the goal of increasing awareness and knowledge of health literacy principles through training, educational sessions and collaborations, and by sharing resources important in the development of health literate, patient-facing documents and information.

In the fourth quarter of 2021, we launched the Health Literate Glossary as an internal resource for creating plain-language materials for patients and the public. The glossary currently has over 1,250 words and is available in seven languages. It has been assessed by internal employee resource groups for cultural competency and is updated regularly.

We prioritize health literacy, as evident in our labeling practices. All our new FDA-authorized patient labels undergo rigorous health literacy testing for clarity and accessibility. Our labeling team has innovated a method that improves the patient labeling process for new compounds, ensuring comprehension across diverse levels of health literacy and patient demographics. This methodology, involving participants with limited to adequate health literacy, allows the team to integrate participant feedback with the essential principles of health literacy. This approach results in more informative labels that are easily understood, thereby helping patients use their medications safely and effectively.

Product safety

We operate in a highly complex and ever-changing regulatory landscape driven by many different factors, including novel scientific discoveries and technological advancements.

Specifically, we are using technological advancements such as integrated IT tools, artificial intelligence (AI) and streamlined digital platforms to further enhance how we manufacture high-quality products. We adhere to a strict set of quality standards and have policies and procedures in place to define, measure, control and sustain product quality. Our global quality organization is responsible for establishing standards to ensure our products are manufactured, tested, released and distributed in compliance with regulatory requirements.

We continuously strive to enhance these standards to ensure ongoing compliance with current Good Manufacturing Practices (cGMPs). We provide appropriate, ongoing training on CGMPs for our employees so they are prepared to perform their duties effectively. Our quality system not only ensures all applicable employees are trained, but also monitors the effectiveness of the training.

Our medicines and vaccines are widely tested before they are approved for marketing. This testing is governed by a comprehensive regulatory scheme and by our research policies. We assess the safety of our products in rigorous nonclinical and clinical trials prior to seeking regulatory approval. Following approval of our drugs, vaccines or devices, we continue to monitor their safety profiles.

Product recalls	2019	2020	2021	2022	**2023**
Global number of product recalls[1]	7	16	15	5	**10**
Number of product recalls exclusively outside of the U.S.	6	14	13	2	**6**
Global number of units subject to recall[2,3]	106,694	5,895,375	1,839,656	109,473	**20,340,166**

[1] Periods following June 2021 exclude products that were included in the spin-off to Organon & Co. where the Marketing Authorization has transferred to Organon in the impacted markets.

[2] "Units subject to recall" is defined as units within the scope of a recall that are outside of a company's control.

[3] For 2023, 90% of the recalled units are related to 2 atypical recall events: 1) The recall of two animal health vaccines that have small batch sizes, are made to order, and are sold by individual dose, resulted in 9,539,479 recalled units. Due to how batches are measured, a bottled product would be counted as one unit even though it might contain thousands of doses. By comparison, a made to order vaccine product sold by the dose would be counted as an individual unit. This difference for the made to order products resulted in the high number of units recalled. 2) The global recall of two human health products, DIPROSAN and CELESTONE Sterile Suspension, by Organon & Co. (for which the Company remained the Marketing Authorization Holder in certain trailing markets pending transition to Organon & Co. following spin-off) resulted in 8,818,144 recalled units.

Counterfeit products

We invest in an industry-leading, rigorous and intelligence-led product integrity strategy that is solely focused on protecting patients from the harm associated with counterfeit and diverted medicines. Our global security group oversees our global product integrity strategy and execution. The strategy seeks to protect our patients and our reputation from the negative impacts of counterfeit medicines using a three-pronged approach focused on:

1. Securing the supply chain
2. Investigations and enforcement
3. Raising public and stakeholder awareness

We are committed to cooperating with relevant government agencies, other pharmaceutical manufacturers, wholesalers, distributors, health professionals, consumer groups and related organizations in fighting the problem of counterfeit pharmaceutical products, and in educating the public about the risks of counterfeit products and how to protect against them.

This effort includes a multi-pronged approach to communicating and mitigating the threat of counterfeit medicines as effectively as possible while recognizing it cannot be entirely eliminated.

Our product integrity program focuses on collaboration and information sharing to raise public and stakeholder awareness of the issue. Through active partnerships with other pharmaceutical companies, and with organizations focused on security, patient safety and public health, we advocate for high-priority anti-counterfeiting policy initiatives.

These collaborative efforts support the production of reports, white papers and data circulation initiatives, as well as promote the intelligence sharing needed to combat threats from counterfeit medicines.

The anti-counterfeiting data below detail the number of new suspected and substantiated counterfeit events in 2023 and for the previous four years. It reflects the status of each event for all years presented as of February 21, 2024.

In 2023, our global security group addressed 2,161 new product integrity events that occurred in 85 countries, involving counterfeit, diversion, supply chain security, tampering or brand security (non-Merck, unapproved generic product). Approximately 21 percent of these events have been proactively investigated to identify new or emerging threats, or to further characterize and mitigate known threats.

We enable meaningful enforcement actions as a key strategic priority, and in 2023, our product integrity activity contributed to 158 arrests and the seizure of 25,966 units of counterfeit or illicit versions of our products. There were at least 65 prosecutions in 2023 for pharmaceutical crimes involving our products.

Another crucial aspect of investigations is the forensic analysis of questionable products. This forensic testing is aimed at concluding whether a questioned product is counterfeit, diverted or otherwise illicit. Counterfeit products are characterized to gain further intelligence on the counterfeiters and any threats to public health. There were 1,168 unique questioned samples received as evidence in our forensic labs and prepared for forensic testing in 2023. We also have forensic detection devices in the field globally to analyze and detect counterfeits.

As counterfeiters improve their skills and techniques, our forensic scientists have pioneered the use of several analytical tools for the detection and characterization of counterfeit medicines. We also continue to explore new analytical tools to increase our forensic-testing capabilities. Lab findings are shared with regulatory and law enforcement agencies, and may be used to support subsequent enforcement actions and legal proceedings.

As part of our proactive training and awareness programs, throughout 2023, global security trained approximately 6,822 law enforcement personnel in 47 countries regarding the patient safety risks associated with counterfeit and diverted medications.

Internally, our global security group has a training program on the identification and reporting of suspected counterfeit, diversion and tampering (CDT) events. Started in late 2017, this training has since reached more than 103,000 employees and contractors globally.

Anti-counterfeiting[1]	2019	2020	2021	2022	**2023**
Total investigations of suspected counterfeit products[2]	774	629	1,045	884	**1,225**
Substantiated cases of counterfeit products[2]	215	74	115	237	**235**

[1] Prior-year data have been adjusted to reflect the current status of each event as of February 21, 2024.
[2] Evidence from ongoing investigations of suspected counterfeit products can result in recategorization.

Supply chain integrity

Supply chain security

Our proactive focus on assessing and managing security risk is based on our careful implementation and maintenance of policies and procedures to protect the legitimate distribution of our products. We require customers to purchase our products directly from us or from authorized distributors listed publicly on our corporate website. Accordingly, we work collaboratively with internal and external stakeholders to promote security awareness and protect the integrity of our supply chain.

We ensure compliance with our established policies, standards and procedures by identifying vulnerabilities and threats to the supply network, and providing solutions that minimize risk. We position resources globally to manage our security programs, monitor touch points, and investigate incidents.

We evaluate and use innovative solutions that enhance the security and visibility of the end-to-end supply of our products. Along with dedicated resources to monitor risk intelligence and industry security trends, we are well-positioned to adapt and respond as security risks change and new ones emerge.

As a certified importer under the Customs Trade Partnership Against Terrorism (CTPAT) program, we are validated by U.S. Customs and Border Protection as an elite Tier 3 member for implementing best practices in supply chain security. This adds an important layer to the security of our products and materials imported to the U.S.

Serialization and product security

Serialization—adding a 2D barcode with a unique identification number on each package that goes to market—is a tool we are invested in to secure our supply chain and prevent counterfeiting. A serial number on individual packages may enable anyone along the supply chain, from a distributor to a pharmacist to a patient, to scan the code and verify it as a genuine product.

Many global markets have regulatory requirements to serialize pharmaceutical products. We comply with all mandated serialization requirements. Throughout 2023, we have voluntarily expanded serialization into several markets that do not have serialization requirements. These markets are piloting programs to enhance the security and traceability of our products with the use of blockchain technology.

We are exploring digitally enabled anti-counterfeiting technologies to further protect our products. These technologies use mobile phones to verify packaging features—proof-of-concept studies are ongoing. If successful, this technology, coupled with serialization, would create a powerful multi-factor verification platform to enhance the security of our products.

*For more information on our suppliers, please see the Supply Chain section beginning on page **113**, and for more information on patient access and product availability see the Availability section on page **28**.*

Animal health and safety

Veterinary medicinal product safety and risk management

The Animal Health Global pharmacovigilence (GVP) team manages a system for the collection, review and reporting of adverse events, and for the ongoing assessment of product safety. Global PV leads all safety monitoring and signal management activities for the Animal Health veterinary medicinal products portfolio, from the time of product approval through the end of its lifecycle.

Research and development

The Animal Health vice presidents of R&D (pharmaceuticals/biologics) hold joint responsibility for the risk-benefit determination for our Animal Health pipeline and marketed veterinary medicinal products, and oversee all Animal Health clinical programs.

We test our investigative Animal Health pharmaceuticals and vaccines vigorously for safety, quality and efficacy before submitting them for approval, which can be obtained only after thorough review by independent regulatory authorities.

This testing and refining of a product can take years to complete. When the required testing is complete and found to be satisfactory by the appropriate government regulatory agencies, the product is approved to be marketed. Once a product is on the market, we follow all applicable pharmacovigilence rules, and report our findings to regulatory authorities.

Regulatory affairs

A consistent, science-based regulatory environment is one of the conditions necessary for innovation and for providing our customers with high-quality products. We support global harmonization of the regulatory process for veterinary medicines through our global trade association, HealthforAnimals, which is recognized as an observer organization. This allows HealthforAnimals to offer input and provide perspectives in meetings with international standards-setting bodies, including the International Cooperation on Harmonisation of Technical Requirements for Registration of Veterinary Medicinal Products (VICH).

*For more information, please visit the **Ethical Treatment of Animals page** on our corporate website.*

Quality

All of our pharmaceuticals and vaccines must be tested for product quality as well as for their safety and efficacy in treated animals. Our submissions to regulatory agencies also include rigorous human food safety testing for those products used in food-producing animals, in addition to user safety and environmental safety assessments.

Pharmacovigilance

Our Animal Health GPV team manages a system for the collection, review and reporting of adverse events reports we receive, and for the continuous assessment of product safety. GPV leads safety monitoring and signal management activities for the Animal Health veterinary medicinal products portfolio from product approval through the end of its lifecycle.

Supply chain

We are committed to the highest ethical standards to help maximize the long-term sustainability of our business and of the communities in which we operate. We strive to conduct business with third parties that share our commitment to high ethical standards and operate in a responsible and ethical manner. Here, we use the term "third party" broadly to include any individual or entity that provides goods or services in support of our sourcing initiatives.

We have established business relationships with thousands of suppliers, including direct suppliers (such as external manufacturing providers), capital expenditure suppliers, indirect suppliers and research providers. Our direct suppliers provide us with goods such as packaging, components and ingredients. Capital expenditure suppliers provide goods and services such as engineering and construction. Our indirect suppliers include those that provide services such as logistics, travel and meetings, facility management and marketing. Our research providers include those that provide lab supplies and other R&D-related services.

GRI/SASB disclosures in this section:

GRI 2-6 GRI 203 GRI 204 GRI 308 GRI 414 GRI 414-1

*For more info on disclosures, see the **Reporting indices**.*

Policies

Business Partner Code of Conduct

Supplier Performance Expectations

Supply Chain Security

Conflict Minerals Policy

Counterfeiting of Medical Products

Human rights

*For information on our policies, please visit our **Policies & Positions** and **Sustainability Resources** pages on our corporate website.*

We expect all third parties we engage with to comply with all applicable regulations, as well as share in our commitment to the principles outlined in our **Business Partner Code of Conduct**.

External charters, principles and initiatives that we endorse or guide our work on this topic:

- United Nations (UN) Universal Declaration of Human Rights (UDHR)
- UN Guiding Principles on Business and Human Rights (UNGPs)
- International Labour Organization (ILO) Core Conventions
- Organization for Economic Co-operation and Development Guidelines (OECD) for Multinational Enterprises on Responsible Business Conduct
- Global Reporting Initiative (GRI) Standards
- UN Global Compact
- Pharmaceutical Research and Manufacturers of America (PhRMA) Code on Interactions with Health Care Professionals
- International Federation of Pharmaceutical Manufacturers and Associations (IFPMA) Code of Practice
- European Federation of Pharmaceutical Industries and Associations (EFPIA) Code of Practice
- Pharmaceutical Supply Chain Initiative (PSCI) Principles for Responsible Supply Chain Management

Our approach to supplier relations

Our Procurement organization enables the sourcing of goods and services needed to further our mission and manage our business. We strive to work with responsible third parties that are aligned to our values and standards and provide the best overall value to our business. We work to identify and mitigate potential risks related to third parties to minimize disruptions to our supply chain.

We have a sourcing management process in which environmental sustainability, social responsibility, economic inclusion and supplier diversity principles are integrated in each stage. Throughout the supplier life cycle, we establish expectations, assess risk, support supplier development and manage performance.

Our Global Supplier Management Group (GSMG) is responsible for driving our Sustainable Sourcing program and maintaining the associated standards and processes by which suppliers are identified, qualified and managed.

Our Sustainable Sourcing program has the following key elements:

- Integration into our Global Sourcing & Procurement Strategy and processes
- A cross-functional team that oversees program development and the processes and guidelines which encourage best practices, prevent violations of supply chain standards and limit risk
- Establish sustainability requirements that are communicated to our suppliers and included in supplier selection. (For more information about how we engage with suppliers, please see our Environmental Sustainability section on pages **73-100**)
- Review, track and communicate supplier sustainability programs
- Collaborate as we educate and learn from our supply chain, peer companies and best-in-class organizations

To help manage and address potential areas of risk associated with third-party business relationships, we have a Third-Party Risk Management program and committee chaired by the senior vice president for Global Procurement. The committee establishes, implements and monitors environmentally sustainable, socially responsible and ethical sourcing practices to ensure performance is aligned with our purpose.

Supplier selection and expectations

We select suppliers that share our commitment to our values and principles. We expect appropriate standards of conduct and respect for human rights—consistent with our own—from our suppliers, contractors, vendors and external partners. We use our Business Partner Code of Conduct to communicate our expectations for Human Rights, Labor & Employment, Health, Safety & Environment, and Ethical Business Practices.

We communicate our Business Partner Code of Conduct, along with our Supplier Performance Expectations, to existing and potential third parties. They are included in requests for information, proposals and quotes, as well as in our purchase order terms and conditions. We make our Business Partner Code of Conduct available in multiple languages on our website.

Our Business Partner Code of Conduct references the PSCI Principles for Responsible Supply Chain Management (the Principles). PSCI is a group of more than 70 pharmaceutical and health care companies that promotes sustainable sourcing and better business conditions across the industry. The Principles set the standard for human rights, ethics, labor, health and safety, environment and related management systems. We believe PSCI member companies share our vision of excellence in safety, environmental, and social outcomes across the global pharmaceutical and health care value chain.

Supplier due-diligence assessments

We have an established supplier due diligence process to evaluate and verify the suitability of suppliers. It involves conducting an assessment of the suppliers' financial stability, operational capabilities, legal, compliance, reputation, and overall business practices. We use the information gathered to make informed decisions about supplier selection, mitigating potential risk, and ensuring compliance with our Company's requirements.

Key topics covered by supplier due diligence include:

- Anti-bribery and corruption
- Conflict minerals
- Denied-party screening
- Environmental, social and governance risks
- Financial stability
- Information security and cybersecurity
- Intellectual property
- Human rights and labor risks
- Privacy (data protection)
- Supply chain security
- Pharmacovigilance

In 2023, we centralized our third-party due diligence process into a single tool resulting in increased efficiency and stronger mitigation controls across risk domains—a streamlined process for which due diligence assessments are required based on the type of product/service provided by the third party. By integrating risk intelligence data with due diligence assessments completed by third parties, we are better able to identify potential risks.

Where assessments and audits identify deficiencies or opportunities for improvement, we monitor suppliers to ensure our concerns are addressed in a responsible and compliant manner. As part of our monitoring, we have mechanisms to report, track and monitor supplier plans to address nonconformance and drive continued improvement. Additional reviews are performed for external manufacturing suppliers and suppliers that manage personal and private information.

*For more information on maintaining a global supply network, see the Availability section on pages **28-32**.*

Protecting the privacy of personal information

Some of our suppliers, such as contract research organizations, market research agencies, information technology systems developers, corporate card suppliers, and travel and meeting agencies process personal information in connection with their performance of services. We require these suppliers to provide appropriate privacy protection for the personal information they handle, in accordance with our privacy policies and applicable privacy laws, regulations and guidelines.

*See more about our privacy program on pages **124-126**.*

Training

We understand the importance of training and continue to develop numerous training events that are assigned to employees and provided to industry peers and suppliers. Most of our internal classes are assigned through our centralized learning system. In addition to providing training through our internal systems, we also work with PSCI to develop and provide training to our suppliers and peers.

*Additional details regarding our supplier-focused programs can be found on pages **113-121**.*

Assessing the effectiveness of our program

During 2023, we reviewed the metrics listed in the table below to help us assess the effectiveness of our efforts in our business and supply chain. We use these measures to monitor our performance and identify opportunities to help improve our programs.

*You can find a **list of our products and an update on our pipeline** on our corporate website.*

*For more information on our sector, business relationships, financials, operations and organization changes, please see our **2023 Form 10-K**.*

Supply chain	2019	2020	2021	2022	**2023**
Supplier Labor and Human Rights (LHR) audits conducted[1]	39	47	10	12	**10**
Supplier Labor and Human Rights (LHR) audit Corrective Actions and Preventive Actions (CAPA) closed[2]	100%	100%	100%	100%	**98%**
Suppliers reached regarding Environmental, Social and Governance (ESG)[3]	N/A	1,492	1,856	2,471	**2,686**

[1] Announced on-site audits, independently performed by third-party audit firms; primary focus on direct material (Tier 1) supplier facilities located in certain high-risk countries.

[2] While data is presented based on the year the audit was performed, not all CAPAs are due within the same calendar year. All CAPAs from previous reporting periods have been closed. For the current reporting period, the CAPA closed percentage is as of June 13, 2024. Open CAPAs will be monitored through closure, and progress will be presented in next year's report.

[3] Suppliers reached regarding ESG means the aggregate number of our suppliers who have attended PSCI's capability-building program through the Company's membership in PSCI. Per **PSCI's website**, the aim of this program is "to build supplier knowledge and expertise so they can identify and solve safety, social, environmental and ethical issues for themselves."

Supplier social assessment

Our audit program of suppliers examines various topics related to a supplier's social and ethical performance. These audits aim to assess supplier's compliance with human rights and labor standards, health and safety practices, environmental sustainability as well as ethical business practices. We are committed to upholding the PSCI Principles, and we require our suppliers to operate in compliance with all applicable laws. Functions responsible for overseeing the implementation of our supplier audit program include GSMG and Global Safety & Environment organization.

Human rights and labor risks

We recognize that companies with supply chains that extend into high-risk countries potentially face greater Labor and Human Rights (LHR) risks. We can be exposed to these risks through our supply chain, as some of our third-party suppliers and service providers operate in higher-risk countries. We consider LHR risks as part of our third-party risk management activities. We also recognize that potential risks may exist beyond Tier 2 suppliers.

We detect and address risks in our supply chain through:

Supplier selection

Selecting suppliers that are socially responsible and that share our commitments to ethics and integrity—We strive to obtain services, goods, active ingredients, components, finished goods or other products in a way that is lawful and fair.

Expectations

Setting and communicating our expectations of suppliers, including those related to child labor, forced labor and human trafficking—We use our Business Partner Code of Conduct, which is made available in multiple languages on our website, to communicate our expectations.

Supply chain mapping

Mapping our supply chain to identify which of our suppliers operate in countries known to present a significant risk of LHR issues—We use this information to decide the level of due diligence that may be necessary.

Due diligence

Conducting appropriate supplier due diligence to determine the level of risk presented by suppliers, including potential new (prospective) suppliers as well as our existing suppliers—Our supplier due diligence process for LHR targets direct materials suppliers, including external manufacturing suppliers and contract manufacturing organizations.

We use a self-assessment questionnaire to gather information on freely chosen employment, child labor, employment practices, employee disclosures, fair treatment, wages, benefits and working hours. We use suppliers' responses to judge whether that supplier has programs or procedures in place to address potential risks for LHR, including modern slavery and human trafficking. We use the information gathered as part of our due diligence to determine the acceptability of suppliers' local practices. Results are then applied by GSMG to inform our supplier-selection and risk-management processes.

Contracts

Seeking written commitment from suppliers to respect the principles set forth in our Business Partner Code of Conduct through our contracts/agreements—Our standard contract templates contain a Business Partner Code of Conduct compliance clause that includes provisions related to modern slavery.

Auditing

Performing LHR audits at select supplier facilities to verify their conformance with our expectations (as stated in our Business Partner Code of Conduct) and working with them to address identified nonconformances—We use independent third-party audit firms to perform announced LHR audits at suppliers' facilities. When preparing our audit schedule, we consider the industry risk, the category of materials supplied, the country in which the supplier operates and results of past due diligence.

Remedial actions

Tracking and reporting on the closure of remedial actions taken by suppliers to address identified nonconformances (gaps/concerns) revealed by supplier LHR auditing—We monitor open remedial actions and ensure they are closed in a timely manner.

Monitoring

Assigning relationship managers from within GSMG to monitor the performance of key suppliers—We hold suppliers accountable for meeting their contractual obligations.

Governance

Using our Third-Party Risk Committee to oversee the management of risks associated with third-party relationships—This committee is chaired by our senior vice president for GSMG. The role of our Third-Party Risk Committee (and associated Third-Party Risk team) is to assist senior leadership by providing independent and objective oversight, monitoring and reporting in relation to the risks presented by third parties.

Engagement

Engaging and seeking input from relevant stakeholders, including GSMG, Ethics & Compliance, Legal, and the Global Safety and Environment (GSE)—The engagement and collaboration help gather input and guidance from subject matter experts.

Collaboration

Working with PSCI to develop training, tools and maturity models, and to share knowledge across our industry and with our suppliers—The aim of the collaboration through our membership with PSCI is to help our suppliers identify and solve social issues for themselves.

Training

Providing training to sourcing professionals who have responsibility for supplier selection, oversight and monitoring—Training is provided as part of onboarding and covers topics on our Business Partner Code of Conduct, third-party risk management, and mitigation of modern slavery risks in supply chains.

Next steps

We will continue working on our efforts to identify, assess and address LHR risks within our operations and supply chains.

These efforts will include:

- Investigating all reported concerns promptly
- Conducting supplier LHR due diligence to identify and address risks
- Auditing select suppliers to verify conformance with standards for LHR
- Holding suppliers accountable for addressing nonconformances revealed by LHR audits
- Participating in the activities/initiatives of PSCI's Human Rights and Labor Sub-Committee

Supplier environmental assessment

Environmental sustainability principles are integrated into each stage of our supplier management program. Our GSMG drives the program and maintains the associated standards and processes by which we identify, qualify and manage suppliers. The Environmental Sustainability Program is an essential element of supplier management along with Social Responsibility, Economic Inclusion and Supplier Diversity (EI&SD). We continue to partner with our third parties to drive environmental sustainability throughout our supply chain.

*For more information on our integrated approach with our suppliers, please see pages **73-100**.*

External manufacturing

We screen external manufacturers of active pharmaceutical ingredients (APIs) and finished products for environmental health and safety (EHS) compliance, in addition to quality, supply and technical competence requirements. The EHS screening and on-site assessment is led by GSMG and GSE, and includes a survey covering topics, such as regulatory compliance, fatalities and major incidents.

Based on the screening results and activities undertaken by the supplier, certain external manufacturers are subject to a more detailed on-site assessment conducted by a multidisciplinary team, which may include our Quality, GSE, Global Technical Operations and GSMG representatives. We periodically reassess the external manufacturers we contract with using a risk-based approach; higher-risk external manufacturers are subject to more frequent on-site assessments.

We expect that observations made during the EHS assessment process will be remediated by our external manufacturers, and we monitor and track corrective actions and preventative actions (CAPAs) through completion.

For 2023, all assessments referenced in the table to the right were performed in person.

External manufacturing EHS assessments	2019	2020	2021	2022	**2023**
Prospective external manufacturers	43	50	42	27	**49**
Current external manufacturers	48	27	54	51	**80**
Total	91	77	96	78	**129**

Economic inclusion and business diversity

We have been working for almost 40 years to create economic opportunities for underrepresented communities by procuring products and services from small businesses and from minority-, women-, veteran-, LGBTQ+- and disability-owned enterprises ("small and diverse suppliers"). This approach to Global Economic Inclusion & Business Diversity (EI&BD) is integrated into our overall Global Diversity & Inclusion (GD&I) strategy under our fourth pillar (Transform the environmental, cultural and business landscape). Global EI&BD is also a key priority of the GDE&I Business Consortium. When we support small and diverse businesses, we bring economic opportunities to communities that create jobs, build wealth and bring in community development. These efforts are also good for business. Our efforts support a global supply chain which links stakeholders with innovative and qualified suppliers to help us deliver on our purpose.

*For more information on our overall GDE&I strategy, please see pages **55-61**.*

$3.6 billion

Global spend with small and diverse Tier 1 and 2 suppliers, representing 15 percent of our global procurement spend in 2023

In 2023, our expenditures with small and diverse suppliers exceeded $3 billion dollars, spanning a global footprint within the U.S., Latin America (LATAM), Europe, Middle East, Africa and Canada (EMEAC), and Japan, China and Asia Pacific (JCAP) regions. We understand how a healthy, equitable and diverse supply chain can empower people to overcome social and economic barriers.

As a member of the Billion Dollar Roundtable (see page **121** for more information), we've committed to spending $4.4 billion annually by 2030 with small and diverse suppliers. To achieve this ambitious goal, we have implemented a comprehensive enterprise-level strategy that goes beyond traditional "supplier diversity" programs. Our objective is to elevate our spending by thinking on a larger scale and providing our suppliers with the necessary tools and resources to foster their growth, sustainability, and enhanced competitiveness. An example of one such initiative is our Advanced Leadership Program for small and diverse suppliers.

Advanced Leadership Program for small and diverse suppliers

The Advanced Leadership Program (ALP) for small and diverse suppliers is a specialized executive development opportunity that empowers business owners to improve their leadership skills and deepen their understanding of aspects related to their organizations, leading to the overall growth and success of their enterprises.

The ALP represents a collaborative effort between our Company and Drexel University. With a focus on experiential development, this program draws upon evidence-based research and the expertise of industry practitioners to provide valuable knowledge and experiences. Participants engage in thought-provoking discussions and facilitated sessions with faculty from Drexel University, as well as their peers and our leadership. These interactions foster self-reflection, personal growth and the establishment of relationships within a broader community network.

The ALP program modules support overarching themes of growing and scaling small and diverse suppliers by nurturing their leadership capabilities and enhancing the strategic understanding of their operations. Led by an interdisciplinary faculty and subject matter expert team, each module provides an experiential and applied approach to executive development. In addition, participants complete a Request for Proposal (RFP) Capstone

Challenge that offers an invaluable experience through the coaching and feedback they receive on their presentations and overall performance.

Topic areas include:

- Leadership, Communication and Teams
- Building Personal Brand and Storytelling
- Strategic Networking
- Digital Presence and Strategy
- Customer Digital Journey
- Digital Media Metrics and Measurement
- Financial Reporting, Planning and Budgeting
- Short-term and Long-term Business Decisions
- Intersecting Finance and Operations
- Operations and Production Planning
- Purchasing and Contract Management

Since its inception in 2021, the ALP has graduated 50 small and diverse suppliers. We are proud to continue this program in 2024 and are excited to incorporate new content related to environmental sustainability. This addition will help participants understand the role they can play in helping to address environmental issues, aligning with the growing focus on sustainable practices in the business world.

Performance

We have exceeded industry best practices by spending more than 10 percent of our purchasing activities with small business and minority-, women-, veteran-, LGBTQ+-, and disability-owned business enterprises. In 2023, our spend with these businesses represented 15 percent of our total procurement spend.

Second Tier Business Diversity Program

We have expanded our supplier diversity program through our Second Tier Business Diversity Program. In addition to monitoring our purchases to ensure we have small and diverse suppliers providing quality goods and services, we also monitor our large Tier 1 suppliers to ensure the inclusion of small and diverse suppliers within their supply chains.

The objective is to encourage the development of sustainable opportunities for small and diverse suppliers to participate in the procurement process. The Second Tier Business Diversity Program serves as an enhancement to, and not as a replacement for, existing efforts aimed at increasing meaningful opportunities for small and diverse suppliers to participate at the Tier 1 level.

In 2023, 22 Tier 1 suppliers actively participated in our Second Tier Business Diversity Program, generating an impact of $269 million through their inclusion of small and diverse suppliers for direct purchases on our behalf.

Small and diverse supplier spend—Tier 1 (in millions)[1]	2019	2020	2021	2022	**2023**
Diverse supplier spend: Global[2]	N/A	N/A	$2,858	$2,964	**$3,359**
Diverse supplier spend: U.S.	$2,433	$2,270	$2,374	$2,269	**$2,683**
Small business spend: U.S.	$979	$775	$1,027	$1,088	**$1,550**

N/A: Not available.

[1] Status as a diverse supplier or a small business supplier is validated at the time of spend with such supplier using applicable criteria.

[2] Starting in 2021, our reports include global spend data.

Small and diverse supplier spend—Tier 2 (in millions)	2020	2021	2022	**2023**
Second Tier: Global	$54	$115	$258	**$269**

Impact spend in the U.S (Tier 1)[1,2]

$2.7 billion
Spending with small and diverse suppliers

$5.6 billion
Economic impact of this spending

>35,900
Jobs supported through small and diverse suppliers

$1.6 billion
Earnings through jobs created/sustained

[1] Based on 2023 data.
[2] Billion Dollar Roundtable Economic Impact Study. University of Washington, Foster School of Business.

Economic Inclusion Virtual Lab

In 2023, our Company relaunched the Economic Inclusion Virtual Lab, which created a dynamic platform for engaging and educating small and diverse suppliers seeking business growth and procurement opportunities. Born during COVID-19—when in-person events were curtailed—the Economic Inclusion Virtual Lab develops relationships with scalable, sustainable small and diverse suppliers, which positively impacts the communities in which we live and work.

The theme was "Celebrating U.S. National Small Business Week." Designed to grow our Tier 1 and Tier 2 supply chain, the program expanded diverse and small suppliers' knowledge on how to do business with us, as well as how to increase overall business engagement. During our year-long programming, we brought together nearly 500 small and diverse suppliers, partners and advocacy representatives from around the world, including Brazil, Canada, South Africa, the UK and the U.S.

Billion Dollar Roundtable

Our ongoing economic inclusion and business diversity efforts enable us to continue our membership in the Billion Dollar Roundtable (BDR), an exclusive industry organization that recognizes and celebrates corporations that achieve spending of at least $1 billion with minority-, women-, veteran-, LGBTQ+- and disability-owned enterprises headquartered in the U.S. and globally.

Our membership in the BDR allows us to share and access best practices in supply chain diversity excellence with other organizations that have achieved this status.

*To learn more about our **involvement with BDR**, please visit our corporate website.*

In addition to the BDR, we work in partnership with:

- Canadian Aboriginal and Minority Supplier Council (CAMSC)
- Disability:IN
- European LGBTIQ Chamber of Commerce (EGLCC)
- Integrare—Integrare Centro de Integração de Negócios (Brazil)
- Canada's 2SLGBTQI+ Chamber of Commerce (CGLCC) LGBTQ-Owned Business Certification
- Minority Supplier Development in China
- Minority Supplier Development UK (MSDUK)
- National LGBT Chamber of Commerce (NGLCC)
- National Minority Supplier Development Council (NMSDC)
- National Veteran Business Development Council (NVBDC)
- National Veteran-Owned Business Association (NaVOBA)
- OutBritain, LGBT+ Chamber of Commerce in the UK
- South Africa Supplier Diversity Council (SASDC)
- Supply Nation (Australia)
- United States Hispanic Chamber of Commerce (USHCC)
- United States Pan Asian American Chamber of Commerce (USPAACC)
- Women Business Enterprises Canada Council (WBE Canada)
- WEConnect International
- Women's Business Enterprise National Council (WBENC)

Human rights

Our Company is committed to meeting its responsibility to respect internationally recognized human rights standards. We believe that dignity and respect for people is essential in business. Respect for human rights is core to our purpose to save and improve lives around the world.

GRI/SASB disclosures in this section:

GRI 412	GRI 412-1	GRI 412-2	GRI 412-3

*For more info on disclosures, see the **Reporting indices**.*

Policies

Code of Conduct

Business Partner Code of Conduct

Clinical trial ethics

Human rights

Use of medicine in capital punishment

Conflict minerals policy

External charters, principles and initiatives that we endorse that guide our work on this topic:

- UN Universal Declaration of Human Rights (UDHR)
- UN Guiding Principles on Business and Human Rights (UNGPs)
- International Labour Organization (ILO) Core Conventions
- Organization for Economic Co-operation and Development Guidelines (OECD) for Multinational Enterprises
- Global Reporting Initiative (GRI) Standards
- UN Global Compact
- Pharmaceutical Research and Manufacturers of America (PhRMA) Code on Interactions with Health Care Professionals
- International Federation of Pharmaceutical Manufacturers and Associations (IFPMA) Code of Practice
- European Federation of Pharmaceutical Industries and Associations (EFPIA) Code of Practice
- Pharmaceutical Supply Chain Initiative (PSCI) Principles for Responsible Supply Chain Management

Our approach to human rights

Our approach to human rights involves embedding respect for human rights in our policies, conducting risk assessments and due diligence, engaging with suppliers, providing training, maintaining grievance mechanisms and encouraging the reporting of concerns. By taking these measures, we are working to identify, address and mitigate human rights-related risks throughout our operations and supply chain.

Our **Human Rights Public Policy** expresses our commitment to respect and promote internationally recognized human rights standards and explains our approach to identifying, preventing and mitigating adverse human rights impacts related to our operations and supply chain. We strive to avoid causing or contributing to adverse human rights impacts through our own activities and seek to prevent or mitigate adverse impacts that are linked to our operations and products.

We embed our commitment to respect human rights in our **Code of Conduct**, our **Business Partner Code of Conduct**, as well as relevant corporate policies. Moreover, our commitment is integrated into our Strategic Framework, which encompasses our key priorities, guiding principles, core values and annual enterprise initiatives.

In 2023, we conducted an enterprise-wide human rights assessment to identify human rights risks and impacts within our own operations and supply chain. This involved mapping potential risks and impacts on various stakeholders including employees, supply chain workers, and local communities. In addition, we reviewed and updated our Human Rights Public Policy to ensure that it remains relevant and effective in addressing human rights issues.

We partnered with external human rights experts to review our approach and identify opportunities for improvement. This activity involved a review of internal practices related to governance, due diligence, salient human rights issues, monitoring, reporting, remediation, integration and stakeholder engagement. The review also involved benchmarking to help assess our progress and gain insights from others to improve our approach.

Remedy

As part of our efforts to protect against human rights abuses, we maintain a grievance mechanism that allows employees and others to report concerns in a confidential manner, without fear of retaliation. We provide multiple channels through which reports can be made, including our **Speak Up** tool at msdethics.com.

We expect our suppliers and other business partners to encourage all workers to report concerns or suspected illegal activities without threat of reprisal, intimidation or harassment, and to investigate and take corrective action if needed. In addition, we expect our suppliers to provide workers with information on how to confidentially report concerns.

We maintain a process to receive, investigate and address concerns, including any grievances related to human rights abuses.

*For more information on mechanisms for raising concerns, please see page **103**.*

Governance

Our oversight and monitoring of business-related human rights risks is supported by leaders across the organization, including HR, Global Safety & Environment, the Global Supplier Management Group, the Ethics & Compliance Office, the Global Privacy Office, Enterprise Risk Management, the Office of Social Business Innovation, and the Strategic Policy and Sustainability Council (SPSC), a governing body for ESG.

Employee training on human rights

Business-related human rights issues are embedded within our Enterprise Management Training (EMT) program to help maintain employee awareness and understanding of our Company's expectations. Examples of human rights-related topics covered by our EMT program in 2023 included privacy and data protection; harassment and discrimination; diversity and inclusion; and Code of Conduct; as well as training that explains how to confidentially report concerns, emphasizing the importance of speaking up.

Investment agreements and contracts

Our GSMG manages contract development and execution activities associated with the selection and sourcing of suppliers of goods and services. Through our standard contracts and agreements, we seek a written commitment from suppliers to respect and abide by the principles set forth in our Business Partner Code of Conduct (BPCC). Our BPCC states that suppliers and business partners are expected to uphold the human rights of workers, treat workers with dignity, respect the protection of internationally proclaimed human rights and ensure that they are not complicit in human rights abuses.

*For more information on our social assessments for suppliers, please see pages **116-117**.*

Privacy and data security

Information about our products and people is one of our most valuable assets, which is why we are committed to the ethical use, management and protection of information.

Our commitment applies not only to our own information, but also to the information entrusted to us by others. Our tools, processes and procedures ensure we appropriately collect, use and safeguard this data throughout its lifecycle to preserve its integrity and to prevent unauthorized access or disclosure. In addition, we continue to improve upon our comprehensive, global, state-of-the-art information security and cyber resiliency program.

Goal	2023
Maintain 100% compliance to privacy and data protection regulatory requirements for active incident monitoring, risk/harm analysis and on-time notification of data breaches.[1,2]	**100% compliance maintained**

[1] Regulatory requirements differ by region.

[2] Note that while the methodologies have remained the same, we have updated this goal description for clarity.

GRI/SASB disclosures in this section:

GRI 418	GRI 418-1

*For more info on disclosures, see the **Reporting indices**.*

Our approach to privacy and data security

Over the past 20 years, we have developed and continually improved a comprehensive global privacy program that promotes organizational accountability for privacy, data governance and data protection across our business and with our partners and suppliers. We were the first in the world to obtain regulatory approval in the EU for Binding Corporate Rules (BCRs), based in part on our existing Asia-Pacific Economic Cooperation (APEC) Cross-Border Privacy Rules (CBPRs) certified program.

This achievement demonstrates organizations can rely on common internal standards and processes to govern international data transfers across both the EU and APEC regions to simplify their ability to address the growing regulatory challenges in this area.

Our holistic approach to privacy has its origins in biomedical research ethics and the protection of participants in our research studies. In addition, for other activities and processes involving data about people, we have adapted human subject research ethics standards for risk-benefit analysis, transparency, anonymization, coding and prior review.

Global privacy program

We intend our global privacy program to be flexible and adaptable, and to be compliant with new laws and regulations where we conduct business. We are well positioned in that our global privacy program is based on the EU General Data Protection Regulation (GDPR). Regulators around the world are increasingly adopting regulations similar to, or modeled on, the GDPR.

Countries around the world continue to introduce new privacy regulations or amend existing ones, and in the U.S. many states have also enacted their own comprehensive consumer privacy laws.

There is increased regulatory scrutiny and interest in companies that seek to collect and monetize personal information without full transparency and permission from data subjects. We anticipate regulators will continue to increase requirements and levy fines. However, we are prepared for these changes due to our comprehensive, closed-loop privacy program and our active engagement with regulators around the world.

Our approach is one of accountability and transparency. Our chief ethics and compliance officer leads the Global Privacy Office and reports to the general counsel, who is part of the Executive Team and reports directly to our CEO. Oversight of our Global Privacy Program is conducted within our Privacy and Data Protection Board (PDPB), a cross-functional governance body that connects to our Corporate Compliance Committee and meets quarterly.

At the heart of this effort is a global privacy program with a network of more than 200 privacy stewards globally. We measure program maturity through a combination of annual privacy self-assessments at the entity and organization level, and through internal, comprehensive privacy audits. With privacy recognized as a human right in almost every location around the world, the pull through of the Global Privacy Program through the network of privacy stewards broadens the reach of our privacy program beyond the Global Privacy Office.

A touchstone of our Global Privacy Program, our privacy and data protection impact assessments can identify and address potential privacy risks through controls and remediation approaches aligned to regulatory requirements and best practices.

We are increasingly reliant on third-party partners and service providers to assist us in our global operations. Just as we need to pay close attention to privacy and data protection, so do the third parties in our supply chain. We employ a robust third-party due diligence process to ensure we only do business with those who share our values and standards.

We also provide annual mandatory cybersecurity training to communicate and reinforce the guidelines in our Information Security Standards Handbook and our commitment to a strong cybersecurity culture. We have a systematic approach for ensuring employees can understand and comply with our policies, including a robust cybersecurity training and awareness program that provides learning opportunities to encourage employees to make security-aware decisions.

Training topics include, but are not limited to information protection, identity, email, browsing and mobile security. Employees are also expected to maintain an up-to-date record of their qualifications that details relevant cybersecurity work experience, skills, certifications, and internal, industry- or vendor-provided training.

We welcome customers, employees, candidates, patients and others whose personal information we may have in our systems to raise requests about their data, such as to access, correct, port or delete the information.

We have a well-established process for reporting privacy incidents to the Global Privacy Office for investigation. The first step of this process is to verify the facts reported and to substantiate the concerns.

In 2023, we received 302 substantiated privacy concerns, which marks a 39 percent increase compared to the previous year. Increasingly effective efforts towards raising awareness about privacy incidents globally contributed to this increase. Ten out of 302 incidents were deemed to be reportable to data protection authorities or data subjects.

Global privacy program	2019	2020	2021	2022	**2023**
Number of concerns regarding privacy practices, breaches of privacy and losses of personal data that were substantiated[1-4]	29	250[2]	425[2]	217[3]	**302[4]**
Number of privacy breaches requiring notification by our Company to individuals or government authorities	2	0	3	4	**10**

[1] Includes all concerns about our privacy practices reported to our Company's Privacy Office and substantiated or verified. Verified concerns are investigated as part of the Company's Incident Management Process which includes a determination of whether regulatory or data subject notification is required.

[2] Increased sensitivity of network traffic monitors contributed to increased number in 2020 and 2021.

[3] Consistent network traffic monitoring and increased privacy and cybersecurity awareness efforts resulted in reduced number of privacy incidents in 2022.

[4] As part of the Global Privacy Office's efforts to deepen further the company's understanding of the global privacy program, a series of quarterly awareness campaigns were rolled to all employees and contractors in 2023. One such awareness campaign focused exclusively on recognizing and reporting privacy incidents, whether occurring internally or at an external processor. This heightened awareness directly resulted in an increase in the number of reported privacy incidents in Asia Pacific and Latin America, as well as by the Animal Health division.

Government relations

Our Political Contributions Committee engages in the political process at the federal, state and international levels to educate policymakers, lawmakers and candidates on issues critical to our industry and to our purpose to invent new medicines and vaccines to save and improve lives.

The Center for Political Accountability (CPA), in conjunction with the Zicklin Center for Governance & Business Ethics at The Wharton School of the University of Pennsylvania, has recognized our Company as a “Trendsetter” for the last seven years in their annual CPA-Zicklin Index of Corporate Political Disclosure and Accountability report. The CPA-Zicklin Index assesses companies’ disclosure practices and spending and accountability policies for spending with corporate or treasury funds to influence elections. Zicklin defines a Trendsetter as a S&P 500 company scoring 90 percent or above.

CPA-Zicklin Index

For the last seven years, we have been listed as a “Trendsetter” in CPA’s annual index of the top 100 companies in the Russell 1000, which demonstrates our commitment to transparency around political giving.

GRI/SASB disclosures in this section:

GRI 2-28	GRI 415	GRI 415-1

*For more info on disclosures, see the **Reporting indices**.*

Policies

Independent expenditures

Trade association dues

Our approach to government relations

We make bipartisan contributions that we carefully consider on a case-by-case basis. In establishing our political giving priorities, our Political Contributions Committee considers various factors to prioritize candidates who support policies that enhance innovation and patient access to health care. While we provide contributions to candidates who support innovation and access, we recognize that we do not agree with every position that recipients take on every social and business issue.

Political contributions

We spent a total of $903,829 in U.S. corporate political contributions in 2023. A large portion of these funds was used to support the campaigns of 333 candidates in 27 states plus the District of Columbia. The party breakdown of the contributions for individual candidates was approximately 40 percent Democratic, 59 percent Republican, and less than 1 percent Independent. Republicans held a majority in 57 chambers, Democrats held the majority in 40 chambers and in one chamber, power is divided equally between the parties.

Support was also provided under this program to state legislative leadership committees, industry-affiliated PACs, and several national organizations representing state elected officials. Examples of these groups include the Republican Governors Association and the Democratic Governors Association, as well as PhRMA expenditures in California.

In addition, we made contributions in the U.S. through our Political Action Committee (PAC) to support state and federal candidates. These contributions are fully funded by voluntary employee contributions. In 2023, our PAC spent a total of $624,400. These contributions included financial support for the campaigns of 299 candidates in 43 states. The breakdown by party affiliation was approximately 38 percent Democrat, 62 percent Republican, and less than 1 percent Independent. This program also provided support to state and federal legislative leadership committees.

Our representatives involved in state and federal government relations activities made the recommendations for specific corporate political and PAC contributions based on the budget and priorities approved by the Political Contributions Committee. Outside legal counsel conducted a thorough review of proposed contributions to ensure they were permitted under law. Corporate political contributions were also then approved by our internal U.S. legal team.

In addition to these contributions, in 2023 we provided corporate contributions to candidates or political parties in Australia, New Zealand and Japan. These contributions were reviewed and approved in accordance with relevant internal policies and in compliance with the electoral funding and disclosure laws of their respective countries.

Recognition for our transparency

Our integrity extends to our political giving, where we carefully make bipartisan contributions on a case-by-case basis in support of policies that enhance innovation and patient access to health care.

For the last seven years, Center for Political Accountability in conjunction with the Zicklin Center for Governance & Business Ethics at The Wharton School of the University of Pennsylvania has named us a “Trendsetter” in their annual CPA Index of Corporate Political Disclosure & Accountability report, demonstrating our commitment to transparency around our political giving.

*Information on our political contributions is on the **Transparency Disclosures page** of our corporate website.*

Membership associations

We are a member of numerous U.S.-based industry and trade groups. We work with these groups because they represent the pharmaceutical industry and business community in debates led by governments and other stakeholders, and because they help the industry reach consensus on policy issues.

Our top three trade associations in 2023:

- PhRMA
- Biotechnology Industry Organization (BIO)
- U.S. Chamber of Commerce

When our trade associations actively lobby on our core business issues, we seek to align their positions with our own. There are times, however, when we may not share the views of our peers or associations—both on issues that are central to our business and on those that, while important, are not directly material to our purpose. With representatives on boards and committees of industry groups and trade associations, we can voice questions or concerns we may have about policy or related activities. We may even recuse ourselves from related trade association or industry group activities when appropriate.

The Governance Committee of our Board has oversight of our membership in trade associations and grassroots lobbying activities. Each year, the Board receives a report that lists for the previous year (a) the U.S. industry and trade groups in which we are a member and for which our dues are greater than $25,000, and (b) the amount of our dues spent by these groups on lobbying and political activity in the U.S.

*Please see the **Transparency Disclosures page** on our corporate website for a list of our U.S. industry and trade groups.*

Through our top three trade associations, in 2023, we engaged on the following policy issues at the U.S. federal level:

- Medicare Part B
- Medicare Part D
- Prescription Drug User Fee Act (PDUFA)

We also engaged on the following policy issues at the U.S. state level in 2023:

- Market-based solutions to support patient access to innovative medicines, vaccines, and health care
- Legislative and regulatory policies to enable a strong business environment for U.S. operations
- Support for a strong immunization infrastructure
- Protecting access to animal health products

In addition, we engaged on the following policy issues in Europe in 2023:

- Addressing the European Commission's review of incentives for biopharmaceutical products
- Fostering frameworks for sound pricing and procurement regimes in and across diverse EU member state economies
- Supporting government vaccination, hepatitis and diabetes programs
- Advancing the dialogue for sustainable models to fund future cancer and cardiovascular care
- Improving standards for health technology assessment and health literacy
- Ensuring science-based policies for biological medicines
- Science-based trade policy for farm animals and food products derived from farm animals
- EU Chemicals Sustainability Strategy and the Zero Pollution Action Plan
- Preventing Antimicrobial Resistance (AMR): Prevention First Initiative
- Animal welfare and the science-based solutions provided by our new technology portfolio
- Animal health as a contributor to food sustainability

In 2024, we conducted a climate policy alignment assessment of U.S. trade associations in which we were a member in 2023 and for which our dues were greater than $25,000. For this assessment, we determined whether these trade associations had publicly disclosed formal positions on climate change and, if so, we reviewed those positions in the context of our position on climate change. This assessment is on the **Sustainability Resources page** of our corporate website.

*Information on our approach to climate change and related performance data is on pages **74-83**.*

Reporting indices

Indices included in this report

Global Reporting Initiative (GRI)

SASB Standards

UN Global Compact (UNGC)

UN Sustainable Development Goals (SDGs)

Culture of Health for Business

Stakeholder Capitalism Metrics

Global Reporting Initiative (GRI)

The Global Reporting Initiative (GRI) standards represent global best practices for reporting publicly on a range of economic, environmental and social impacts. The table below summarizes where responses to the GRI disclosures can be found throughout this report.

General disclosures

GRI #	Description	Response
2-1	Organizational details	**Page 4**
2-2	Entities included in the organization's sustainability reporting	All of our Company's global operations, including those of subsidiaries, are in scope for this report unless stated otherwise. This report includes activities at all facilities, owned and leased, over which we have operational control, unless otherwise noted. The basis for reporting on other matters specific to the operations of our business can be found in our **2023 Form 10-K**.
2-3	Reporting period, frequency and contact point	Except as otherwise noted, we report on our policies, initiatives and performance annually. The data in this report cover the same period as our annual financial reporting, from January 1, 2023, to December 31, 2023. In some cases, the narrative in the report also includes content regarding decisions and initiatives that took place in the first half of 2024. Our last Impact Report was published in August 2023. We welcome your feedback on this report as well as any other comments or questions you may have. You may contact us at the address, email, phone number or web address below. Merck & Co., Inc. ESG Strategy & Engagement 126 East Lincoln Avenue P.O. Box 2000 Rahway, NJ 07065 USA investor_relations@merck.com 908-740-4000 **merck.com/contact-us/**
2-4	Restatements of information	Any restatements of information from prior Impact Reports, and the reasons for these restatements, are described in the footnotes beneath the performance data tables.

GRI #	Description	Response
2-5	External assurance	ERM CVS provided limited assurance of select 2023 greenhouse gas and water data included in this report and submitted to CDP. To view the ERM CVS limited assurance statement for our environmental data, please visit the **Sustainability Resources page** of our corporate website. The limited assurance engagement was performed in accordance with the International Standard on Assurance Engagements ISAE 3000. We did not obtain external verification for this Impact Report in its entirety.
2-6	Activities, value chain and other business relationships	**Pages 113-121**
2-7	Employees	**Pages 45-73**
2-8	Workers who are not employees	**Pages 63-64**, **69**
2-9	Governance structure and composition	**Page 11** Additional information on our Board structure and roles can also be found in our **2024 proxy statement** (pages 11-23, 30-31).
2-10	Nomination and selection of the highest governance body	
2-11	Chair of the highest governance body	
2-12	Role of the highest governance body in overseeing the management of impacts	
2-13	Delegation of responsibility for managing impacts	
2-14	Role of the highest governance body in sustainability reporting	
2-15	Conflicts of interest	Information on our Board's Conflict of Interest policy can be found in our **Policies of the Board** in Section 13.
2-16	Communication of critical concerns	For information on communicating to the Board, as well as topics discussed with shareholders, please visit our **2024 proxy statement** (pages 25-26).
2-17	Collective knowledge of the highest governance body	Information on our Board's and its Committees' responsibilities, including with respect to sustainability, as well as information on our Board's and its Committees' self-evaluations can be found in our **2024 proxy statement** (pages 14-23) and in the Policies of the Board and the Committees' charters, which are available on our **corporate website**.
2-18	Evaluation of performance of the highest governance body	
2-19	Remuneration policies	A full discussion of our remuneration policies for our Board and for Named Executive Officers (NEOs) can be found in our **2024 proxy statement** (pages 42-87). For information on how a measure in our Company's Scorecard links the compensation of most employees, including our executives, to certain Sustainability metrics, please see page 55 of our **2024 proxy statement**.

GRI #	Description	Response
2-20	Process to determine remuneration	A full discussion of our approach to remuneration for our Board and for Named Executive Officers (NEOs) can be found on pages 42-87 of our **2024 proxy statement**. For information on how a measure in our Company's Scorecard links the compensation of most employees, including our executives, to certain Sustainability metrics, please see page 55. To learn more about the non-binding advisory vote to approve the compensation of our NEOs, please see our Form 8-K filed with the Securities and Exchange Commission on May 30, 2024, a copy of which is available on our **corporate website**.
2-21	Annual total compensation ratio	For more information on the CEO pay ratio, and methodology for determining this ratio, please see page 66 of our **2024 proxy statement**.
2-22	Statement on sustainable development strategy	**Pages 9-10**
2-23	Policy commitments	**Pages 21**, **62**, **74**, **84**, **92**, **96**, **102**, **113**, **122**
2-24	Embedding policy commitments	**Pages 21**, **55**, **74**, **84**, **96**, **102**, **113**, **122**
2-25	Processes to remediate negative impacts	Our efforts to remediate the negative impacts of our operations are addressed throughout this report.
2-26	Mechanisms for seeking advice and raising concerns	**Pages 103**, **123**
2-27	Compliance with laws and regulations	We did not have any significant instances of non-compliance with laws and regulations in 2023, globally.
2-28	Membership associations	**Page 129**
2-29	Approach to stakeholder engagement	**Pages 13-14**
2-30	Collective bargaining agreements	**Page 72**, **Human Rights policy**
Material topics		
3-1	Process to determine material topics	**Page 12**
3-2	List of material topics	
3-3	Management of material topics	

Economic

GRI #	Description	Response
GRI 201 Economic performance (2016)		
201-1	Direct economic value generated and distributed	For information about our business and economic performance, please see our **2023 Form 10-K** for the year ended December 31, 2023, on our corporate website. For information on our overall tax strategy, please see our **Global Tax Strategy** on our corporate website. Information on our employee compensation and benefits can be found on **pages 70-72** of this report. For more information on our impact investments, please visit our **Impact Investing page** on our corporate website and on **pages 41** and **44** of this report.
201-2	Financial implications and other risks and opportunities due to climate change	
201-3	Benefit plan coverage	**Pages 70-72**, as well as our **Well-being Report**
GRI 203 Indirect economic impacts (2016)		
Management Approach	Explanation of the material topic, its boundary, how the topic is managed, and mechanisms for evaluating the effectiveness of the company's strategy	**Pages 18-44**, **119-121**
GRI 204 Procurement practices (2016)		
Management Approach	Explanation of the material topic, its boundary, how the topic is managed, and mechanisms for evaluating the effectiveness of the company's strategy	**Pages 113-121**
GRI 205 Anti-corruption (2016)		
Management Approach	Explanation of the material topic, its boundary, how the topic is managed, and mechanisms for evaluating the effectiveness of the company's strategy	**Pages 102-105**
205-2	Communications and training on anti-corruption	**Page 105**
GRI 206 Anti-competitive behavior (2016)		
Management Approach	Explanation of the material topic, its boundary, how the topic is managed, and mechanisms for evaluating the effectiveness of the company's strategy	**Pages 102-105**
206-1	Anti-competitive behavior	**Page 105**
GRI 207 Tax (2019)		
207-1	Approach to tax	For information on our tax strategy, the responsible party within our Company and our approach to compliance, please see our **Global Tax Strategy** on our corporate website.

Environmental

GRI #	Description	Response
GRI 301 Materials (2016)		
Management Approach	Explanation of the material topic, its boundary, how the topic is managed, and mechanisms for evaluating the effectiveness of the company's strategy	**Pages 96-100**
GRI 302 Energy (2016)		
Management Approach	Explanation of the material topic, its boundary, how the topic is managed, and mechanisms for evaluating the effectiveness of the company's strategy	**Pages 74-80**
302-1	Energy consumption within the organization (Scopes 1 & 2)	
302-4	Energy reductions	
GRI 303 Water and effluents (2018)		
Management Approach	Explanation of the material topic, its boundary, how the topic is managed, and mechanisms for evaluating the effectiveness of the company's strategy	**Pages 84-88**
303-1	Water as a shared resource	
303-2	Water discharge-related impacts	
303-3	Water withdrawal	
303-4	Water discharge	
GRI 304 Biodiversity (2016)		
304-2	Significant impacts of activities, products, and services on biodiversity	**Pages 89-91**
304-3	Habitats protected or restored	

GRI #	Description	Response
GRI 305 Emissions (2016)		
Management Approach	Explanation of the material topic, its boundary, how the topic is managed, and mechanisms for evaluating the effectiveness of the company's strategy	**Pages 74-76, 81-82**
305-1	Direct greenhouse gas (GHG) emissions (Scope 1)	
305-2	Indirect GHG emissions (Scope 2)	
305-3	Other indirect GHG emissions (Scope 3)	
305-4	GHG emissions intensity	
305-5	Reduction of GHG emissions	
305-6	Ozone-depleting substances (ODS)	
305-7	NOx, SOx and other emissions	
GRI 306 Waste (2020)		
Management Approach	Explanation of the material topic, its boundary, how the topic is managed, and mechanisms for evaluating the effectiveness of the company's strategy	**Pages 92-95**
306-1	Waste generation and significant waste-related impacts	
306-2	Management of significant waste-related impacts	
306-3	Waste generated	
306-4	Waste diverted from disposal	
306-5	Waste directed to disposal	
GRI 308 Supplier environmental assessment (2016)		
Management Approach	Explanation of the material topic, its boundary, how the topic is managed, and mechanisms for evaluating the effectiveness of the company's strategy	**Pages 113-115, 118**

Social

GRI #	Description	Response
GRI 401 Employment (2016)		
Management Approach	Explanation of the material topic, its boundary, how the topic is managed, and mechanisms for evaluating the effectiveness of the company's strategy	**Pages 45-49**, **52-61**
401-1	New employee hires and turnover	**Pages 49-51**
401-2	Benefits provided to full-time employees	**Pages 70-72**, as well as our **Well-being Report**
401-3	Parental leave	We offer employees who become parents up to 12 weeks of paid time off following the birth or adoption of their child. For more information, please see our **Well-being Report** as well as the **Compensation and Benefits page** on our corporate website.
GRI 403 Occupational health & safety (2018)		
Management Approach	Explanation of the material topic, its boundary, how the topic is managed, and mechanisms for evaluating the effectiveness of the company's strategy	**Pages 62-67**
403-1	Occupational health and safety management system	**Pages 62-63**
403-2	Hazard identification, risk assessment, and incident investigation	**Pages 63-65**
403-3	Occupational health services	**Pages 63-67**
403-5	Worker training on occupational health and safety	**Pages 66-67**
403-6	Promotion of worker health	**Page 67**, as well as our **Well-being Report**
403-9	Work-related injuries	**Pages 68-69**
403-10	Work-related ill health	**Pages 64-67**

GRI #	Description	Response
GRI 404 Training & education (2016)		
Management Approach	Explanation of the material topic, its boundary, how the topic is managed, and mechanisms for evaluating the effectiveness of the company's strategy	**Pages 52-54**
404-1	Average hours of employee training	**Page 52**
404-2	Programs for upgrading employee skills and transition assistance programs	**Pages 52-54**, and information on topic-specific trainings can be found throughout the report
404-3	Percentage of employees receiving regular performance reviews	**Page 48**
GRI 405 Diversity & equal opportunity (2016)		
Management Approach	Explanation of the material topic, its boundary, how the topic is managed, and mechanisms for evaluating the effectiveness of the company's strategy	**Pages 55-59**, **61**
405-1	Diversity of governance bodies and employees	**Page 60**, and our **EEO-1 data** for U.S. employees can be found on our corporate website
GRI 412 Human rights assessment (2016)		
Management Approach	Explanation of the material topic, its boundary, how the topic is managed, and mechanisms for evaluating the effectiveness of the company's strategy	**Pages 113-117**, **122-123**, **Human Rights policy**
412-1	Operations that have been subject to human rights reviews	
412-2	Employee training on human rights policies and procedures	
412-3	Investment agreements and contracts that include human rights clauses or underwent screening	
GRI 414 Supplier social assessment (2016)		
Management Approach	Explanation of the material topic, its boundary, how the topic is managed, and mechanisms for evaluating the effectiveness of the company's strategy	**Pages 116-117**
414-1	New suppliers screened using social criteria	

GRI #	Description	Response
GRI 415 Public policy (2016)		
Management Approach	Explanation of the material topic, its boundary, how the topic is managed, and mechanisms for evaluating the effectiveness of the company's strategy	**Pages 127-129**
415-1	Political contributions	**Pages 128-129**
GRI 416 Customer health & safety (2016)		
Management Approach	Explanation of the material topic, its boundary, how the topic is managed, and mechanisms for evaluating the effectiveness of the company's strategy	**Pages 106-112**
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	**Pages 109-110**
GRI 417 Marketing & labeling (2016)		
Management Approach	Explanation of the material topic, its boundary, how the topic is managed, and mechanisms for evaluating the effectiveness of the company's strategy	**Page 108**
417-1	Requirements for product and service information and labeling	
GRI 418 Customer privacy (2016)		
Management Approach	Explanation of the material topic, its boundary, how the topic is managed, and mechanisms for evaluating the effectiveness of the company's strategy	**Pages 124-126**
418-1	Substantiated complaints regarding breaches of customer privacy and losses of customer data	

Sustainability Accounting Standards Board (SASB)

SASB is an independent standards-setting organization dedicated to improving the effectiveness and comparability of corporate disclosure on Environmental, Social and Governance (ESG) factors. The table below summarizes how our existing reporting aligns with the recommended metrics for the Biotechnology & Pharmaceuticals Standard within the Health Care sector, and where this information can be found in this report.

SASB #	Description	Response
Safety of clinical trial participants		
210a.1	Discussion, by world region, of management process for ensuring quality and patient safety during clinical trials	**Pages 27**, **106-109**
210a.2	Number of U.S. Food and Drug Administration (FDA) Sponsor Inspections related to clinical trial management and pharmacovigilance that resulted in: Voluntary Action Indicated (VAI) and Official Action Indicated (OAI)	None
Access to medicines		
210a.3	Total amount of monetary losses as a result of legal proceedings associated with clinical trials in developing countries	Not reported
240a.1	Description of actions and initiatives to promote access to health care products for priority diseases and in priority countries as defined by the Access to Medicine Index	**Pages 18-44**
240a.2	List of products on the World Health Organization (WHO) List of Prequalified Medicinal Products as part of its Prequalification of Medicines Program (PQP)	**Page 30**
Affordability and pricing		
240b.1	Number of settlements of Abbreviated New Drug Application (ANDA) litigation that involved payments and/or provisions to delay bringing an authorized generic product to market for a defined time period	Information regarding Abbreviated New Drug Application (ANDA) litigation can be found in our **2023 Form 10-K**, on pages 106-108.
240b.2	Percentage change in average list price and average net price across U.S. product portfolio compared to previous year	**Pricing Transparency Report**
240b.3	Percentage change in list price and net price of product with largest increase compared to previous year	Not reported

SASB #	Description	Response
Drug safety		
250a.1	List of products listed in the FDA's MedWatch Safety Alerts for Human Medical Products database	FAERS MedWatch
250a.2	Number of fatalities associated with products as reported in the FDA Adverse Event	
250a.3	Number of recalls issued, and total units recalled	FAERS MedWatch, and page 109
250a.4	Total amount of product accepted for takeback, reuse, or disposal	We do not collect data on the amount of product accepted for takeback, reuse or disposal.
250a.5	Number of FDA enforcement actions taken in response to violations of current Good Manufacturing Practices (cGMP), by type	Please visit the FDA website for more information.
Counterfeit drugs		
260a.1	Description of methods and technologies used to maintain traceability of products throughout the supply chain and prevent counterfeiting	
260b.2	Discussion of process for alerting customers and business partners of potential or known risks associated with counterfeit products	Pages 110-111
260a.3	Number of actions that led to raids, seizure, arrests, and/or filing of criminal charges related to counterfeit products	
Ethical marketing		
270a.1	Total amount of monetary losses as a result of legal proceedings associated with false marketing claims	Not reported
270a.2	Description of code of ethics governing promotion of off-label use of products	Page 108
Employee recruitment, development and retention		
330a.1	Discussion of talent recruitment and retention efforts for scientists and research and development personnel	Pages 49-50
330a.2	Voluntary and involuntary turnover rate	Page 50

SASB #	Description	Response
Supply chain management		
430a.1	Percentage of entity's facilities and Tier I suppliers' facilities participating in the Rx-360 International Pharmaceutical Supply Chain Consortium audit program or equivalent third-party audit programs for integrity of supply chain and ingredients	Our Human Health and Animal Health divisions both use the Rx-360 audit program as a resource for purchasing audit reports in the event that suppliers refuse audits, but we do not currently publish this percentage.
Business ethics		
510a.1	Total amount of monetary losses as a result of legal proceedings associated with corruption and bribery	Not reported
510a.2	Description of code of ethics governing interactions with health care professionals	**Page 102**, **Code of Conduct & Compliance**, and **PhRMA Code on Interactions with Health Care Professionals**
Activity metrics		
000.A	Number of patients treated	**Pages 18**, **20**, **22**, **27-28**, **33-36**, **38-43**
000.B	Number of drugs in portfolio, and in research and development (Phases 1-3)	**Pipeline**

UN Global Compact (UNGC)

The United Nations Global Compact (UNGC) is a voluntary initiative that encourages businesses to adopt sustainable and socially responsible policies and practices. It provides a framework for companies to align their operations and strategies with ten universally recognized principles in the areas of human rights, labor standards, environmental protection and anti-corruption efforts. As a participant in the UNGC we have committed to integrating these principles into our business practices. The table below shows where each principle features in this report.

Principle	Description	Response
Human rights		
1	Businesses should support and respect the protection of internationally proclaimed human rights	**Pages 122-123**, **Human Rights policy**
2	Businesses should make sure that they are not complicit in human rights abuses	**Pages 102**, **116-118**, **122-123**, **Human Rights policy**
Labor		
3	Businesses should uphold the freedom of association and the effective recognition of the rights to collective bargaining	**Page 72**, **Human Rights policy**
4	Businesses should support the elimination of all forms of forced and compulsory labor	**Pages 102**, **116-118**, **122-123**, **Human Rights policy**
5	Businesses should support the effective abolition of child labor	
6	Businesses should support the elimination of discrimination in respect of employment and occupation	**Pages 55-61**, **123**
Environment		
7	Businesses should support a precautionary approach to environmental challenges	**Pages 73-100**, **Respect for Environmental, Health and Safety**
8	Businesses should undertake initiatives to promote greater environmental responsibility	
9	Businesses should encourage the development and diffusion of environmentally friendly technologies	
Anti-corruption		
10	Businesses should work against corruption in all its forms, including extortion and bribery	**Page 105**

UN Sustainable Development Goals (SDGs)

The SDGs are a set of 17 global goals whose aim is to end poverty, fight inequality and injustice, and tackle climate change by 2030. The table below summarizes how our reporting aligns with the SDGs and where this information can be found in this report. More information on our priorities can also be found on page 17.

Goal	Description	Response
SDG 1: No Poverty	End poverty in all its forms everywhere	**Pages 18-44**
SDG 2: Zero Hunger	End hunger, achieve food security and improved nutrition and promote sustainable agriculture	**Merck Animal Health**
SDG 3: Good Health & Well-being	Ensure healthy lives and promote well-being for all at all ages	**Pages 18-45**, **63-69**, **105**, **Well-being Report**
SDG 4: Quality Education	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	**Pages 52-54**
SDG 5: Gender Equality	Achieve gender equality and empower all women and girls	**Pages 45**, **53**, **60-61**
SDG 6: Clean Water & Sanitation	Ensure availability and sustainable management of water and sanitation for all	**Pages 84-88**
SDG 7: Affordable & Clean Energy	Ensure access to affordable, reliable, sustainable and modern energy for all	**Pages 75-80**
SDG 8: Decent Work & Economic Growth	Promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all	**Pages 45-61**, **113-121**
SDG 9: Industry, Innovation & Infrastructure	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	**Pages 22-26**, **40-42**
SDG 10: Reduced Inequalities	Reduce inequality within and among countries	**Page 61**, **Human Rights policy**
SDG 11: Cities & Communities	Make cities and human settlements inclusive, safe, resilient and sustainable	Not applicable
SDG 12: Responsible Consumption & Production	Ensure sustainable consumption and production patterns	**Pages 92-100**
SDG 13: Climate Action	Take urgent action to combat climate change and its impacts	**Pages 73-82**
SDG 14: Life Below Water	Conserve and sustainably use the oceans, seas and marine resources for sustainable development	**Pages 84-91**
SDG 15: Life on Land	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss	
SDG 16: Peace, Justice & Strong Institutions	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	**Pages 40-44**, **105**
SDG 17: Partnerships for the Goals	Strengthen the means of implementation and revitalize the global partnership for sustainable development	**Pages 13-14**, **17**

Culture of Health for Business (COH4B)

The Culture of Health for Business (COH4B) is a framework for companies to disclose their impact on the health of employees, families and communities, as well as brand and financial performance, that lead to both positive and negative business outcomes. The table below summarizes how our reporting aligns with the recommended metrics for the Biotechnology & Pharmaceuticals Standard within the Health Care sector and where this information can be found in this report.

Metric	Description	Response
Strategic		
Health culture	Promoting an organizational culture of health	**Pages 62-69**, **Well-being Report**
Responsible corporate political activity	Activity that shapes public policy or public opinion	**Pages 127-129**, **Transparency Disclosures**
Responsible marketing practices	Commitments to responsible marketing	**Page 108**
Policies & Benefits		
Health promotion	Providing health promotion and wellness programs	**Pages 46-54**, **70-72**, **Well-being Report**
Paid family and medical leave	Allowing employees to earn pay while away attending to illness, a family member or newborn	**Pages 46-54**, **70-72**, **Well-being Report**
Health insurance	Providing employer-based health insurance	**Pages 46-54**, **70-72**, **Well-being Report**
Equality, diversity and impartiality	Managing inequality, discrimination and diversity, including disability	**Pages 46-61**, **Well-being Report**
Financial literacy	Providing financial literacy resources	**Pages 46-54**, **70-72**, **Well-being Report**
Workforce & Operations		
Work time	Managing working hours, schedules and schedule control	**Pages 46-54**, **70-72**, **Well-being Report**
Job security	Managing job insecurity	**Pages 46-54**, **70-72**, **Well-being Report**
Pay practices	Managing wage policies, minimum wages, wage satisfaction	**Pages 46-54**, **70-72**, **Compensation & Benefits**
Occupational health and safety	Mandatory and voluntary occupational health and safety	**Pages 62-69**
Physical environment	Managing air quality, lighting, green buildings, and health promotion attempts through the built environment	**Pages 76-79**

Metric	Description	Response
Community		
Community environmental impacts	Managing the environmental impacts of company operations on communities	Pages 73-100, CDP
Social capital and cohesion	Encouraging links, shared values and understanding	Pages 45-72, 62-69
Community involvement	Investments in programs to benefit communities, including disaster response and recovery	Pages 18-44, 114-118, Philanthropy, Impact Investing, Medical Outreach Program

Stakeholder Capitalism Metrics

At the World Economic Forum's (WEF) annual meeting in Davos in 2020, 120 of the world's largest companies supported efforts to develop a core set of common metrics and disclosures for their investors and other stakeholders. Below is our alignment against the Core metrics in this framework, as well as select disclosures from the Expanded metrics. Our Company currently is not a signatory to the Stakeholder Capitalism Metrics.

Principles of governance

Metric	Response
Governing purpose	
Setting purpose (Core)	**Pages 9-11**
Purpose-led management (Expanded)	**Pages 9-11**
Quality of governing body	
Governance body composition (Core)	**Page 11**. Additional information on our Board structure and roles can also be found in our **2024 proxy statement** (pages 11-23, 30-31).
Progress against strategic milestones (Expanded)	**Page 15-16**
Remuneration (Expanded)	A full discussion of our remuneration policies for our Board and for Named Executive Officers (NEOs) can be found in our **2024 proxy statement** (pages 42-87). For information on how a measure in our Company's Scorecard links the compensation of most employees, including our executives, to certain Sustainability metrics, please see page 55 of our **2024 proxy statement**.
Stakeholder engagement	
Material issues impacting stakeholders (Core)	**Page 12**
Ethical behavior	
Anti-corruption (Core)	**Page 105**
Protected ethics advice and reporting mechanisms (Core)	**Pages 102-104**
Alignment of strategy and policies to lobbying (Expanded)	**Pages 127-129**
Risk and opportunity oversight	
Integrating risk and opportunity into business process (Core)	**Pages 11**, **13**

Planet

Metric	Response
Climate change	
GHG emissions (Core)	Pages 74-82
Paris-aligned GHG emissions targets (Expanded)	Page 74
TCFD implementation (Core)	Pages 75-76
Nature loss	
Land use and ecological sensitivity (Core)	Pages 89-91
Freshwater availability	
Water consumption and withdrawal in water-stressed areas (Core)	Pages 84-88
Impact of freshwater consumption and withdrawal (Expanded)	CDP
Air pollution	
Air pollution (Expanded)	Page 83

People

Metric	Response
Dignity and equality	
Diversity and inclusion (Core)	Pages 55-61
Pay equality (Core)	Page 61
Wage level (Core)	Not reported
Risk for incidents of child, forced or compulsory labor (Core)	Page 123, Human Rights policy

Metric	Response
Human rights review, grievance impact and modern slavery (Expanded)	Page 123, Human Rights policy
Freedom of association and collective bargaining at risk (Expanded)	Pages 70-72, 116-117, Human Rights policy
Health and well-being	
Health and safety (Core)	Pages 62-69
Employee well-being (Expanded)	Pages 62-69, Well-being Report
Skills for the future	
Training provided (Core)	Pages 52-54

Prosperity

Metric	Response
Employment and wealth generation	
Absolute number and rate of employment (Core)	Pages 49-51
Infrastructure investments and services supported (Expanded)	Pages 22-26, 40-42
Economic contribution (Core)	2023 Form 10-K
Financial investment contribution (Core)	2023 Form 10-K
Significant indirect economic impacts (Expanded)	Pages 22-44
Innovation for better products and services	
Total R&D expenses (Core)	2023 Form 10-K, page 55
Community and social vitality	
Total tax paid (Core)	2023 Form 10-K