

STRATEGY & MANAGEMENT

- 4** Company profile
- 8** Letter from the CEO
- 11** Sustainability strategy & goals
- 21** Sustainable Development Goals
- 23** Stakeholder dialogue
- 28** Materiality analysis

Company profile

We are Merck, a science and technology company. We are pioneers of human progress, driven by our curiosity.

We are working toward a better future in a special organizational setup and are bringing together different disciplines under one roof with the three business sectors Life Science, Healthcare and Electronics.

Our Life Science business sector provides the tools, high-grade chemicals and consumables that accelerate scientific breakthroughs and enable the biopharmaceutical industry to ensure that medicines are safe and effective for a global population. In our Healthcare business sector, we advance innovation through our research, enable life-changing therapies for serious illnesses, treat patients with cancer, cardiovascular, diabetes, thyroid disorders, and multiple sclerosis, and help people to realize their wish to have a child. In our Electronics business sector, we are the company behind the companies, advancing digital living. Our semiconductor and display solutions are used in the manufacture of many components for electronic devices. We are thus changing the way in which information is processed and made accessible. In addition, our specialists also explore visionary new solutions at the interfaces of our three diversified business sectors.

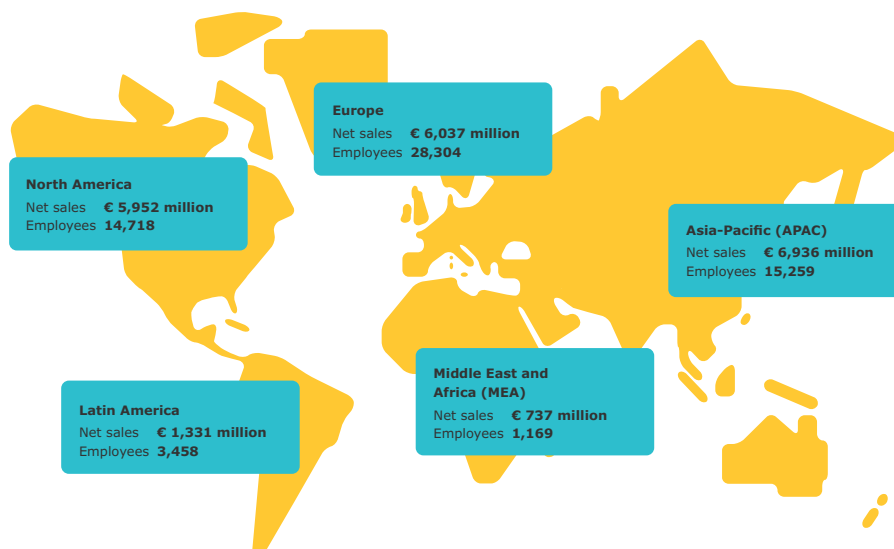
Ever since we were established in 1668, we have continuously reinvented ourselves and adopted a long-term mindset. This approach is rooted in responsibility, care and respect: for our work, our people, our customers, patients, society, and our planet. We want to become the global 21st century science and technology pioneer and are committed to working towards a better future: sustainable progress for humankind.

We hold the global rights to the Merck name and brand. The only exceptions are Canada and the United States. In these countries, we operate as MilliporeSigma in the Life Science business, as EMD Serono in the Healthcare business, and as EMD Electronics in the Electronics business.

Apart from our three business sectors, our financial reporting presents five regions: Europe, North America, Asia-Pacific, Latin America, the Middle East and Africa. As of December 31, 2023, we had 62,908 employees worldwide. The figure as of December 31, 2022, was 64,243 employees.

In 2023, our 225 fully consolidated companies with personnel in 65 countries generated sales of € 21.0 billion. Our 101 production sites are located across 19 countries.

Employees and sales by region – 2023



Group structure

In accordance with our strategic orientation our company comprises three business sectors: Life Science, Healthcare and Electronics.

In **Life Science**, we are a leading global provider of products and services for a wide range of customers, including academic labs, biotech and pharmaceutical companies, diagnostic labs, and the industrial sector. Across our Life Science business sector, we collaborate with the global scientific community to deliver innovations and to this end, we offer a broad and deep product portfolio as well as global Contract Testing Development Manufacturing Organization (CTDMO) services ranging from process development to commercialization. In 2023, we continued to execute our strategy as a diversified life science company to strengthen our three business units, Process Solutions, Life Science Services, and Science & Lab Solutions. The Process Solutions business unit continued to focus on delivering its product offering for the pharmaceutical development and manufacture of filtration devices, chromatography resins, single-use assemblies and systems, processing chemicals, and excipients. The Life Science Services business unit offers traditional and novel modalities, including monoclonal antibodies, high-potency active pharmaceutical ingredients and antibody-drug conjugates as well as viral and gene therapies, including mRNA. In addition to manufacturing, Life Science Services includes sales and marketing, research and development and supply chain operations. Our integrated CTDMO services support clients from pre-clinical phases to commercial production. The Science & Lab Solutions business unit serves customers in the pharmaceutical and biotech industries and other industries in production, testing and research, as well as public authorities and research institutions, providing customers with access to a broad portfolio including reagents, consumables, devices, instruments, software, and services for scientific discovery in addition to lab water instruments, consumables and services, microbiology and biomonitoring products, test assays, analytical reagents, and flow cytometry kits and instruments.

In our **Healthcare** business sector, we operate as a global specialty innovator in the Neurology & Immunology and Oncology franchises as well as in the therapeutic areas of fertility and cardiovascular, metabolic and endocrinological disorders. The Healthcare business sector discovers, develops, manufactures, and markets pharmaceutical and biological prescription drugs to treat cancer, multiple sclerosis (MS), infertility, and growth

disorders as well as certain cardiovascular and metabolic diseases. Our R&D pipeline is focused on strengthening our position in the fields of oncology, neurology and immunology.

With our **Electronics** business sector, we are a major supplier of materials and solutions for the semiconductor and display industries. We have a portfolio of materials, systems and services as well as R&D and a global production network close to our customers. We have built our portfolio to cater to the continued digitalization and the unabated growth of data. The demand for increasingly sophisticated semiconductor chips and displays will continue to rise, not least thanks to developments such as Artificial Intelligence (AI), 5G (fifth-generation mobile networks) and autonomous driving. In recent years, we have developed into a relevant player in the global electronic materials market. In addition, we offer decorative and functional solutions for surfaces of all kinds. The Electronics business sector consists of three business units: Semiconductor Solutions, Display Solutions and Surface Solutions. Three cross-functional boards support the business units: Technology Leadership Board, Supply Chain Leadership Board, and Commercial Leadership Board. They define cross-sector standards, steer portfolio management, drive forward the exchange on good practice, and promote transparency.

Net sales by business sector – 2023



Governance

The founding family, now in the 13th generation, is still the majority owner. This is made possible by our company structure: a corporation with general partners (Kommanditgesellschaft auf Aktien – KGaA). In a KGaA, the total capital is divided between general partners and limited partners. The founding family holds a 70% stake in the listed Merck Kommanditgesellschaft auf Aktien (Merck KGaA), Darmstadt, as general partner via the Group's ultimate parent company, E. Merck Kommanditgesellschaft, Darmstadt. The remaining 30% of the share capital of Merck KGaA is traded on the regulated market of the Frankfurt Stock Exchange and other stock exchanges. In September 2008, our company was added to the FTSE4Good Index, a sustainability index that assesses the social, ecological and ethical conduct of companies.

Group strategy

We are curious minds dedicated to human progress. We believe that scientific exploration and responsible entrepreneurship are key to technological advances that benefit us all. Our values – courage, achievement, responsibility, respect, integrity, and transparency – guide us in every step we take and in every decision we make. Our company has a firm foundation with convictions and principles that the Merck family has lived for generations. We always take them into consideration when discussing and deciding on our enterprise strategy.

In comparison with last year, headwinds have intensified while the world has become more complex, also in some of our end markets. This poses challenges for the global economy and society. With a history of more than 355 years and a truly global footprint today, we have established a solid, resilient foundation that continues to bolster our confidence in our ambition for the future – to become the global 21st century science and technology pioneer. To achieve this, we continue to focus on our key growth drivers: Process Solutions, Life Science Services, Science & Lab Solutions, and Semiconductor Solutions as well as developing specialty drugs in our Healthcare business. Our must-win battles include establishing a fully data-literate organization and strengthening innovation. For instance, in our “Data & Digital” initiatives, we focus on identifying, prioritizing, and implementing technical capabilities across our businesses to promote future growth.

Through our multi-industry business model, we serve attractive global markets with secular growth trends as a trusted partner to advance human progress. Our diversified portfolio benefits from key megatrends. In Life Science, this includes a growing market for complex and novel modalities. In Healthcare, we develop and commercialize specialty pharmaceuticals in the Oncology and Neurology & Immunology franchises. These include the medicines Erbitux® (cancer), Bavencio® (cancer) and Mavenclad® (multiple sclerosis). In addition, we are conducting clinical trials with late-stage xevinapant (head and neck cancer) and further assets in oncology, neurology and immunology in earlier stages of clinical development. With our comprehensive portfolio of semiconductor materials, we expect to benefit in the medium term from continuously increasing demand for chips due to the exponential growth of data volumes as well as the further implementation of artificial intelligence (AI) and the Internet of Things (IoT).

Ultimately, active portfolio management as an integral part of the strategy of our company successfully enabled our transformation over the last decades and our evolution into a global science and technology pioneer. In this sense, inorganic growth is a relevant element to accelerate strategic plans and to leverage business opportunities in our attractive end markets. Strengthening our key growth businesses remains the highest priority for which mergers and acquisitions (M&A) could serve as an appropriate tool.

You can find more information on our company strategy in our [Annual Report 2023](#). Details on the sustainability strategy can be found there and [here in the report](#).

Letter from the CEO



Dear readers

Our global society faces many significant risks in 2024, including the devastating wars in the Middle East and Europe, climate denialism, populism, and political extremism. These and other forces threaten to widen fragmentation and weaken solidarity across our communities.

With so much change and uncertainty surrounding us, many people are becoming increasingly selective about who or what they're prepared to trust, and what's worth fighting for. It's therefore insightful that people today are most trusting of scientists out of all societal leadership roles, and that businesses, especially family-led ones, are the most trusted of all institutions¹. Furthermore, around nine out of ten people believe **science and technology are vital** in addressing big global challenges like climate change and health inequity².

That's why I believe our global society is entering a new era of **trust-driven leadership**. Three things will largely determine the ability of any person or organization to influence the future: the history of their actions, the strength of their values, and their ability to unite others behind a common purpose. Merck is well-positioned to thrive in this era as a globally diversified science and technology company with a proud 355-year history of advancing human progress.

We at Merck acknowledge our special leadership responsibility to demonstrate the potential of science as a **powerful force for good**. This 2023 Sustainability Report reflects the growing size and scale of our ambitions. It also highlights our commitment to be fully accountable for our performance and transparent in how we measure our progress.

After reviewing this report, I had two immediate reactions. My first feeling was tremendous pride in what our energetic teams across the globe have achieved. We've come a long way since 2020 when we committed ourselves to three bold overall goals. By 2030, we aim to fully integrate sustainability into our value chains and achieve human progress for more than one billion people through sustainable science and technology. And by 2040, we will achieve climate neutrality. I am pleased to report that we remain **on track to complete these three goals**.

Here are a few examples of the progress we made toward these goals in 2023:

- We reduced our direct (scope 1) and indirect (scope 2) greenhouse gas emissions by nearly 17% compared with the previous year.
- We obtained more than half of our electricity purchased worldwide from renewable sources for the first time.
- We signed virtual power purchase agreements (VPPAs) that will ensure 100% of purchased electricity in Europe, 90% in North America, and 70% worldwide will be covered by renewable energy certificates from 2025.
- We increased the percentage of women in leadership positions worldwide to a record high of 39%.
- And, we were amongst the world's top five pharmaceutical companies enabling access to our medicines in low and middle-income countries.

Yet despite feeling such tremendous pride in these and other achievements during 2023, I also felt there was **no time to rest upon** these accomplishments. Because while we've made a good start on our journey to transform Merck into a global sustainability leader, there is still a long way to go. In particular, we must continue to explore opportunities to accelerate existing programs and enter new areas where we can also make a significant impact.

I'm therefore pleased about how we further **enhanced our sustainability strategy in 2023**. We've introduced new water and waste management targets and strengthened our commitment to biodiversity and circular operations. Furthermore, we're embedding our social responsibilities more deeply into our ways of working and decision-making.

However, embedding sustainability into every part of our business still isn't enough. In parallel, we must do even more to help our customers, partners, suppliers, and industry peers to advance their own sustainability targets. There are three main ways we're making this a reality.

First, to ensure we fully integrate sustainability into our value chains, we are gaining **greater transparency into the performance of our global supplier network**. Two-thirds of relevant suppliers worldwide are now covered by a valid sustainability assessment – a significant increase compared to the prior year. In addition, 2023 is the first year in which we can include primary emission data from our service providers (scope 3.1) into our calculation methodology.

Second, we are strengthening our focus on creating sustainable innovations and technologies for our customers. In Life Science for example, we increased our portfolio of Greener Alternative Products to 2,500 products in 2023, a 34% increase compared to the prior year.

Third, we are closely collaborating with our peers and partners in groups such as the Sustainable Markets Initiative Health Systems Taskforce to leverage our collective power to **accelerate sustainable change** across entire industries.

Amazing things can happen when you set targets and commit to them with the right mix of global and local partners. Consider, for example, our efforts to **eliminate the neglected tropical disease schistosomiasis**.

Over the last 15 years, we have donated over two billion Praziquantel tablets and supported many other programs to fight this devastating parasitic disease across Sub-Saharan Africa and other tropical countries. After reaching 84 million patients last year and securing approval for a new treatment option for children between three months and six years old, we and our many partners are on track to achieve our ambitious goal of eliminating schistosomiasis as a public health problem by 2030.

Being committed to sustainability is no longer just a social mandate but also a business imperative. For companies like ours that **strive to remain ahead of the curve**, we expect our actions will make us an even more trusted partner to customers and patients and a more attractive place for top talent to make an impact.

Thank you for your ongoing trust and support. I look forward to keeping you updated on our progress.



Belén Garijo

Chair of the Executive Board and CEO

¹ [The 2024 Edelman Trust Barometer](#)

² [2023 3M State of Science Index](#)

Sustainability strategy & goals

The world is facing numerous challenges that also affect us as a company. These include climate change, international conflicts and economic crises, for instance. Our ambition is to leverage science and technology to achieve sustainable progress for mankind.

Our approach: sustainable progress

In our view, sustainable entrepreneurship and profitable growth go hand in hand; we can remain competitive only by creating **added value for society**. Through our innovative and high-quality products, we want to help meet global challenges. At the same time, these types of product secure our financial performance capability.

Responsible action is an integral part of our company culture. This also includes respecting the interests of our employees, customers, investors, and society. For more than 350 years, our company has been shaped and **guided by strong values** that underpin our understanding of sustainable entrepreneurship. Our success is based on courage, achievement, responsibility, respect, integrity, and transparency.

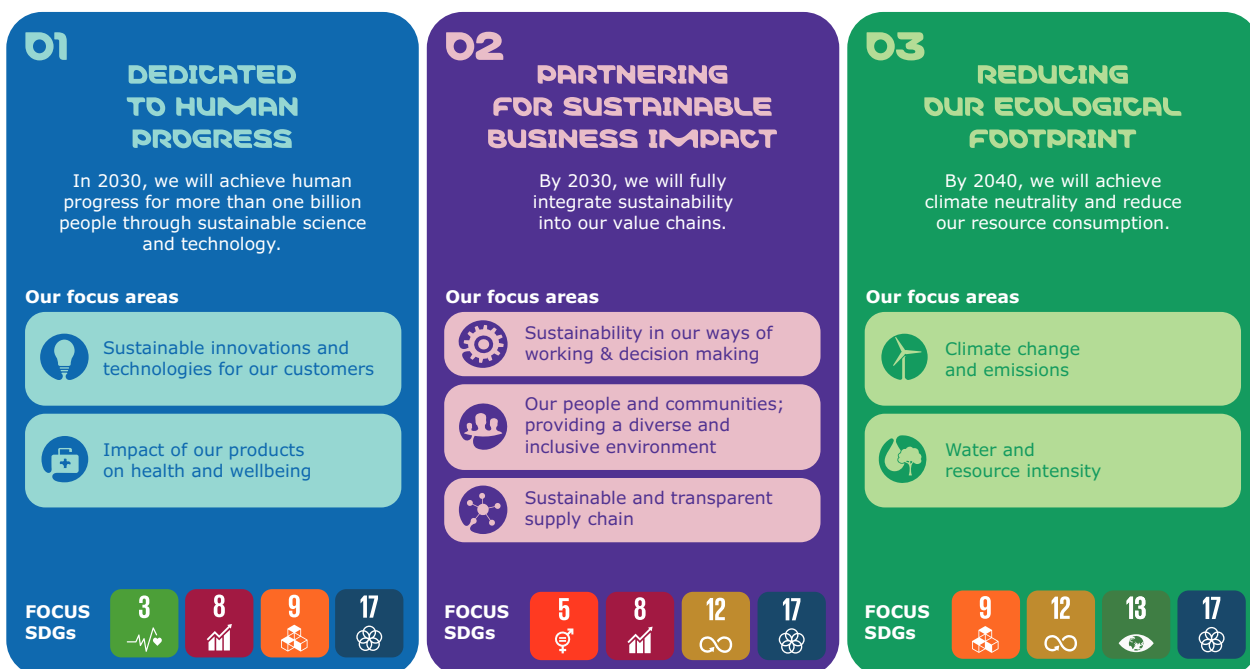
Safety and ethics matter just as much to us as business success. We mitigate **ethical, economic, environmental, and social risks** as far as possible. From the early stages of development through to disposal, we keep an eye on the entire life cycle of a product. We apply strict sustainability standards to our procurement activities. During product manufacture, it is important to us to keep the environmental impact as low as possible, which is why safe production, high environmental standards and strict quality management are of course so important to us. By supplying products that meet extensive sustainability criteria, we also help other companies to achieve their sustainability goals.

We closely monitor **new global trends and challenges** and we use scenario analyses, among other things, in order to clearly understand the complex nature of potential impacts. In addition, we participate in dialogues and initiatives, consult with other organizations in our industry and assess media and news coverage. This enables us to minimize risks while also leveraging **new business opportunities**.

Implementing the strategy globally

The rapidly growing challenges facing both society and the environment require a clear objective for the coming years. Consequently, sustainability is an essential element of our enterprise strategy. We are pursuing three strategic sustainability goals.

Our sustainability strategy



Overall, our sustainability strategy is centered on **seven focus areas** within which we are realizing numerous initiatives and projects today and tomorrow, measuring our progress as we go.

In 2023, we revised our sustainability strategy, which we had communicated in 2020. In particular, we sharpened the second goal: Under the new heading “Partnering for sustainable business impact”, we want to **strengthen our focus on the social aspects in our value chains** and embed sustainability more comprehensively into our decision-making processes. Therefore, in addition to the existing focus area “Sustainable and transparent supply chain”, we are now also working on the new focus areas “Embedding sustainability into our ways of working and decision-making” and “Our people and communities; providing a diverse and inclusive environment”.

For the third goal, “Reducing our ecological footprint”, we modified two of our key indicators for waste and water. The two new indicators valid as of 2024 use more common metrics and also include circular economy criteria. More information on this can be found under Waste & Recycling as well as Water Management.

In addition, we added **two new focus SDGs**: Under the second goal, SDG 5 (Gender equality) to reflect our efforts in the area of diversity, equal opportunities and inclusion. We added SDG 13 (Climate action) under the third goal to reflect our commitment to climate action.

Implementing the sustainability strategy

While we revised our sustainability strategy in 2023, we also forged ahead with its implementation. We want to **change our company culture in the long term** by embedding sustainability aspects even more deeply in our employees’ day-to-day work and decisions. Training courses and best-practice sharing within networks are two routes we follow to achieve this. Moreover, we are integrating the topic of sustainability into the innovation

process and all parts of the value chain. Another one of our aims is to decouple the growth of our businesses from negative environmental impacts.

We use 14 key indicators to record and assess our progress towards achieving our sustainability goals. We defined these indicators back in 2021 and did not identify any significant non-financial performance indicators. The key indicator “Percentage of employees trained in sustainability” was dropped in 2023 because we had achieved the associated target. Instead, as of 2023, we began using several questions in our annual Employee Engagement Survey to measure how mature the sustainability culture is within our organization. More information on this can be found under [Corporate culture](#).

We also take **sustainability aspects** into account when evaluating potential acquisitions, as well as when allocating operating capital, deciding on capital expenditure and in research and development.

Moreover, our annual Long-Term Incentive Plan (LTIP) for Executive Board members and senior executives contains a sustainability factor. We use it to measure performance over a period of three years based on selected key indicators for each of our three sustainability goals. Consequently, target achievement based on the key financial performance indicators can increase or decrease by up to 20%. Details on how this sustainability factor is calculated can be found in the [Compensation Report](#), which is subject to a special content review by Deloitte GmbH Wirtschaftsprüfungsgesellschaft in addition to a formal audit. In 2023 and for the first time, the company tied 15% of variable employee compensation to sustainability parameters. Details on this can be found under [Sustainable innovation & technology](#).

Our key indicators

Goal 1: In 2030, we will achieve human progress for more than one billion people through sustainable science and technology.

Focus area	Sustainability key indicators	Further details
Sustainability innovation and technologies 	◆ Percentage of newly published patent families with positive sustainability impact	Sustainable innovation & technologies
Impact of our products on health and wellbeing 	◆ People treated with our Healthcare products ¹ ◆ People treated with pharma products enabled by our Life Science business sector ¹	SASB index Will be published in 2025

¹ The key indicator is used to determine the sustainability factor for the Merck Long-Term Incentive Plan (LTIP).

Goal 2: By 2030, we will fully integrate sustainability into our value chains.

Focus area	Sustainability key indicators	Further details
Sustainability in our ways of working & decision making 	◆ Result of the employee engagement survey on sustainability culture ²	Corporate culture
Our people and communities; providing a diverse and inclusive environment 	◆ Percentage of women in leadership positions	Diversity, equity and inclusion
	◆ Environment, Health and Safety (EHS) Incident Rate	Plant, process and transport safety
	◆ Lost Time Injury Rate (LTIR)	Health and safety
Sustainable and transparent supply chain 	◆ Percentage of relevant suppliers (in terms of number and supplier spend) that are covered by a valid sustainability assessment ¹	Responsible supply chain
	◆ Violations of Global Social and Labor Standards Policy	Human rights

1 The key indicator is used to determine the sustainability factor for the Merck Long-Term Incentive Plan (LTIP).

2 Key figure "Percentage of employees trained on sustainability" no longer applicable in 2023, as target achieved.

Goal 3: By 2040, we will achieve climate neutrality and reduce our resource consumption.

Focus area	Sustainability key indicators	Further details
Climate change and emissions 	◆ Greenhouse gas emissions (Scope 1 and 2) ¹	Climate action
	◆ Indirect greenhouse gas emissions (Scope 3)	Climate action
	◆ Percentage of purchased electricity from renewable sources	Climate action
Water and resource intensity 	◆ Waste Score ²	Waste & recycling
	◆ Water Intensity Score ²	Water management
	◆ Wastewater quality	Water management

1 The key indicator is used to determine the sustainability factor for the Merck Long-Term Incentive Plan (LTIP).

2 A new key figure will replace this key figure from the 2024 reporting year.

In order to assess the impacts of our products, technologies and business activities on the environment and society, we developed the **Sustainable Business Value (SBV) method**. It enables us to calculate the positive

and negative impacts of our activities along our entire value chain, based on various sustainability criteria. The result is a monetary value that quantifies the benefit that a product has for consumers, the environment and society, for instance. In 2023, we revised the calculation method for environmental aspects and aligned them more closely with our strategic key indicators.

Our operational sustainability goals

Our three strategic goals make our long-term sustainability ambition clear. In order to achieve them, we have also defined operational sustainability goals. These are more specific, may apply for a shorter time frame and are aligned with our current business activities.

Status icons:  New  In Progress  Achieved  Not Achieved

Goal 1: In 2030, we will achieve human progress for more than one billion people through sustainable science and technology.

Material topic	Operational target	Actions 2023	Status
Access to Health	By 2030, we will provide sufficient praziquantel tablets to treat more than 90 million patients per year.	Provided over 210 million tablets in 2023, enabling the treatment of around 84 million patients.	
Access to Health	By 2024, there will be the start of the launch phase to make arpraziquantel dispersible tablets available in the first African countries. By 2030, arpraziquantel will be available to reach up to 12 million preschool-aged children.	Arpraziquantel received a positive scientific opinion from the Committee for Medicinal Products for Human Use (CHMP) - part of the European Medicines Agency (EMA) - in December 2023. This outcome facilitates arpraziquantel's inclusion into the WHO's list of prequalified and essential medicinal products. It will also help to support more direct access to medicines in schistosomiasis-endemic countries.	
Prices of Medicines	In 2023 we served more than 57 million patients in low- and middle-income countries with our healthcare portfolio. Boosted by our low- and middle-income countries access program called "SHAPE", we aim to reach 80 million patients in those countries per year by 2030.	15 pilots have been initiated, including Argentina, Brazil, Egypt, Indonesia, Mexico and several Central American countries.	
Patient Safety	By 2025, we will actively deliver product specific safety and benefit-risk strategies to support the execution of all key priority programs in line with internal and external stakeholders' expectations.	Provided high-level safety and benefit-risk contributions to key priority programs in oncology, neurology and immunology. Supported new partnering and in-licensing opportunities with medical safety strategies and outputs.	

Material topic	Operational target	Actions 2023	Status
		Ensured professional safety contract management with our partners. Integrated Global Patient Safety's tasks and interactions during early development. Actions included the scope extension of the Benefit-Risk Action Team to early development phases, and respective enhancement of the Benefit-Risk Strategy Document to enable early, evidence-based safety decisions.	
Circular Economy, Waste & Recycling	By 2030, 10% of our portfolio will be Greener Alternative Products.	We added 637 Greener Alternative Products to our portfolio. Our free green chemistry tool DOZN™ had over 2,000 users in 78 countries in 2023, helping scientists worldwide make sustainability improvements in their processes and products.	

Goal 2: By 2030, we will fully integrate sustainability into our value chains.

Material topic	Operational target	Actions 2023	Status
Compliance Management	By end of 2023, all subsidiaries of our company will have a new Third Party Risk Management process and tool. By conducting due diligence on all high risk third parties, we check the legal compliance of our business partners.	We started implementing a new workflow-based process for third-party risk management. In addition to the existing high-risk categories, we introduced new general categories to strengthen our due diligence and legal compliance in all countries.	
Interactions with Health Systems and Responsible Marketing	By 2024, we will roll out a risk identification process in a staggered approach to get a better risk overview on bribery and corruption related risks.	We implemented a new tool governing our interactions with healthcare stakeholders.	
Sustainable Supply Chain	By 2024, we will increase transparency of our supply chain by the following two sub-targets: 1) 70% of our relevant number of suppliers will be covered by a valid sustainability assessment 2) 90% of relevant supplier spend will be covered by a valid sustainability assessment. Each of these two sub-targets are weighted 50%.	In 2023, we worked with our relevant suppliers on new assessments and re-assessments, based on the Tfs/EcoVadis Assessment process. As a result, 1) 66% of our relevant number of suppliers were covered by a valid sustainability assessment; 2) 94% of our relevant supplier spend were covered by a valid sustainability assessment.	
Animal Welfare	By 2030, we will make a substantial impact on the 4R (reduction, replacement, refinement and	Key indicators: Our Life Science and Healthcare business sectors have developed 4R strategies; corresponding key indicators exist and are	

Material topic	Operational target	Actions 2023	Status
	responsibility) and make our success visible by meaningful performance indicators implemented in our three business sectors.	regularly tracked. In 2023, the Group Animal Welfare Council approved our approach of preparing a roadmap with the aim of eliminating animal research. We published this approach on our website. Professional training and continuing education: We implemented our training concept in 2023. It specifies professional continuing education for all roles across the Group that deal with in-vivo processes. It includes the Animal Affairs Academy as well as the Vivarium Rotation Program. Our Animal Affairs Academy offers numerous internal and external training courses. It also includes an internal website and a newsletter to inform employees about these courses. Additional companies have become signatories to the Marseilles Declaration, a voluntary self-commitment by companies with commercial animal husbandry activities to standards extending beyond local legislation.	
Animal Welfare	By 2025, we will have all our animal facilities AAALAC accredited and will have established an Animal Affairs Academy which provides knowledge in Animal Science and Welfare and drives progress towards our 4R ambitions.	In 2023, the final two still outstanding Group sites received accreditation. Re-accreditation of our sites takes place every three years. In 2023, we rolled out a global 4R training that teaches all employees how they can help to reduce the use of animals and support the transformation towards animal-free value chains. We strengthened refinement through our alignment in 2023 to make "non-aversive handling of research animals" mandatory for all our animal husbandry facilities. In 2023, the Animal Affairs Academy held more than 60 training courses and workshops on the topic of animal research.	
Animal Welfare	By 2024, we will roll out the process and tool to further streamline the centralized governance for the interactions with healthcare stakeholders and to further increase monitoring as well as risk control capabilities.	IT-based solutions: ◆ We digitized animal welfare-relevant processes, e.g. the approval process for internal work with animals, risk management as well as a reporting system for animal welfare-related incidents. Transparency: ◆ We have set up an internal webinar series called "Let's talk Animal Affairs" in order to discuss the topic of animal welfare transparently and openly with everyone.	
Working Conditions for	We aim to bring our LTIR (Lost Time Injury Rate) below 1.0 by 2025.	Through our BeSafe! program we continuously raise employee awareness of workplace dangers and teach them rules for safe behavior	

Material topic	Operational target	Actions 2023	Status
Employees			
Equal Treatment and Opportunities for All	Aim for gender parity in leadership by 2030.	We focused on retaining and developing talented women by offering mentoring, sponsoring and talent programs. In addition, we repeated our gender pay equity analysis, launched fertility benefits and a returnship pilot program in Germany to ensure we remain an attractive employer.	
Equal Treatment and Opportunities for All	Aim for 30% nationals from Asia, LATAM and MEA in leadership (Role 4+) by 2030.	We developed a Culture, Nationality & Ethnicity Action Plan. We offered development opportunities for underrepresented ethnic talent as well as continued to explore opportunities to source international and underrepresented ethnic talent. We also continued to train our recruiting and sourcing team members.	
Equal Treatment and Opportunities for All	Aim for 30% of underrepresented ethnic colleagues in United States leadership (Role 4+) by 2030.	We developed a Culture, Nationality & Ethnicity Action Plan. We offered development opportunities for underrepresented ethnic talent as well as continued to explore opportunities to source international and underrepresented ethnic talent. We piloted new programs such as the McKinsey Connected Leaders Academy.	
Equal Treatment and Opportunities for All	By 2026, all leaders will have participated in inclusive leadership workshops.	Until the end of 2023 92% of our leaders took part in the Inclusive Leadership Training.	

Goal 3: By 2040, we will achieve climate neutrality and reduce our resource consumption.

Material topic	Operational target	Actions 2023	Status
Climate Action	By 2030, we aim to cover 80% of our purchased electricity with renewables.	Purchasing electricity from renewable sources (new VPPAs in Europe)	
Climate Action	By 2030, we intend to reduce direct and indirect greenhouse gas emissions (Scope 1 and 2) by 50% (2020 baseline).	◆ Systematic examination of the energy consumption at our individual production sites ◆ Reduction of process-related emissions ◆ Emission reduction through green fleet ◆ Training of employees in energy management ◆ Implementation of energy and water efficiency projects at sites	
Climate Action	By 2030, we intend to reduce direct and indirect greenhouse gas emissions	We continued implementing our sustainable packaging initiative, Mpact. We updated its scope	

Material topic	Operational target	Actions 2023	Status
	(Scope 1 and 2) by 50% (2020 baseline).	and have created several working sub-teams such as sustainable blister packaging and the European Packaging and Packaging Waste Regulation (PPWR), which aim is to follow legal changes and new requirements relevant to our MPact initiative. These sub-teams are working on the alignment with new packaging regulations impacting pharmaceutical industry in the upcoming years.	
Climate Action	By 2030, we intend to reduce direct and indirect greenhouse gas emissions (Scope 1 and 2) by 50% (2020 baseline).	To reduce process-related emissions, we successfully piloted a NF3 abatement technology for high volume manufacturing at our site in Hometown, Pennsylvania, USA. In 2023, we developed the plan for broader deployment.	
Climate Action	By 2030, we aim to reduce our Scope3 emissions along the entire value chain by 52% in relation to gross profit.	Supplier decarbonization Shifting transportation from air to sea	
Innovation and R&D	By 2030, we will avoid 10% of packaging weight per unit of sales through our SMASH Packaging strategy.	We embedded our packaging sustainability principles into the product development process so our R&D teams can target, implement and track potential sustainability improvements in product packaging. In 2023, approximately 65% of new product development projects successfully aligned with at least one of our four key impact areas.	
Water Management	Until 2030, improve water efficiency by 50% in comparison to 2020 (m ³ /revenue in million €)	New target was approved by Board.	
Water Management	Until 2025, improve water efficiency in manufacturing sites by 10% (measured by the Merck Water Intensity Score).	Treatment of wastewater from production Optimization of water-using processes Rainwater harvesting	
Water Management	Reduce environmentally relevant trace substance residues in the wastewater of all production sites to below the no-effect threshold.	Further improving the wastewater treatment process	
Circular Economy, Waste & Recycling	By 2025, reduce the environmental impact of our waste by 5% in comparison to our baseline year 2016 (measured by the Merck Waste Score)	Consistently seeking ways to enhance our production processes and disposal methods	
Circular Economy, Waste & Recycling	By 2030, achieve a circularity rate of 70% across the entire organization	New target was approved by Board.	

Roles and responsibilities

Our Executive Board has Group-wide responsibility for our sustainability strategy. It has adopted our three strategic goals. The Group Corporate Sustainability unit is responsible for developing and shaping the sustainability strategy and it informs the Executive Board at least once a year about the progress made and the need for action. It is part of the Group function Corporate Sustainability, Quality and Trade Compliance (SQ), which reports to the Chair of the Executive Board. At Executive Board level, responsibility for Environment, Social, Governance (ESG) also lies with the Chair of the Executive Board.

Group Corporate Sustainability is also responsible for coordinating the Merck Sustainability Board, which is chaired by the Head of SQ, who simultaneously serves as Chief Sustainability Officer. The committee consists of representatives from our business sectors and from key Group functions, such as Procurement, Communications and Controlling.

The Sustainability Board steers and monitors the Group-wide **implementation of the sustainability strategy**, defines priorities and stipulates globally applicable sustainability policies. In addition, the Sustainability Board ensures that the initiatives of our various business sectors, Group functions and subsidiaries align with our global sustainability strategy. Moreover, it recommends corresponding initiatives to the Executive Board. Within their respective area of responsibility, each Executive Board member is also responsible for sustainability, reviews the priorities that have been set, and decides on the implementation of initiatives.

In 2023, the Sustainability Board met 11 times by video conference. In addition to climate-related issues and new sustainability reporting requirements, it also addressed the adaptation of the strategy and **new objectives for circular economy and water management**. The measures adopted by the Sustainability Board are implemented by our line managers as well as by interdisciplinary project teams. To achieve our operational sustainability goals and depending on the focus of the goal, responsibility is assigned to specific teams, functions and business units. Those responsible for implementing actions exchange ideas and coordinate these in an overarching committee. They identify synergies between the projects and align their direction with our sustainability goals.

The Merck Sustainability Advisory Panel (MSAP) supports our company as an **external expert committee for sustainability**. The panel is chaired by the Head of SQ. It comprises independent experts on sustainability-related topics from various institutions worldwide whom we invite on an ad hoc basis. The MSAP advises our company on selected issues and assesses planned activities. Moreover, the members apply their knowledge to help address societal and political challenges and developments that could be strategically relevant for our businesses.

Sustainable Development Goals

The United Nations (UN) 2030 Agenda is a global plan to sustainably promote peace and prosperity and to protect our planet. Since 2016, countries and organizations have been working to implement this agenda with its 17 Sustainable Development Goals (SDGs). Our aim is for our business activities to create shared value that is both measurable and makes a recognizable contribution to society. We rely on the power of science and technology to make a positive impact.

Doing our part

Our **sustainability strategy** focuses on the seven SDGs on which we have the strongest impact through our entrepreneurial actions. In 2023, we added SDG 5 “Gender equality” and SDG 13 “Climate action” to our focus areas.

SDG 3 – Good health and well-being

With our products, we positively impact the health and quality of life of people around the world. Through technological and scientific innovations, we are also helping to improve the health of underserved populations in low- and middle-income countries.

SDG 5 – Gender equality

We are working to create an equitable, fair, inclusive, and tolerant working environment. One of our priorities is to enable all people to reach their full potential, regardless of their gender. For this reason, gender equality is enshrined in our corporate governance and we are committed to diversity and equal opportunity through our support programs, networks and partnerships.

SDG 8 – Decent work and economic growth

We see it as our responsibility to respect human rights both within our company and along our supply chain. That is why we are dedicated to upholding appropriate and fair labor and social standards. We want to drive sustainable economic growth through progressive resource efficiency.

SDG 9 – Industry, innovation and infrastructure

We use our expertise in science and technology to make our products, processes and infrastructure sustainable. In addition, we want to promote the work of scientists worldwide with our innovations and support programs.

SDG 12 – Responsible consumption and production

We use resources efficiently and reduce waste and emissions. We pay attention to this in our product development and in our manufacturing activities. We also help our customers to manufacture their products more sustainably and efficiently and to achieve their own sustainability goals.

SDG 13 – Climate action

Limiting climate change is one of the most urgent social responsibilities of the 21st century. Through our climate action, we intend to contribute to the Paris Agreement and achieve climate-neutral operations throughout our entire value chain by 2040.

SDG 17 – Partnerships for the goals

We need strong partners in order to drive sustainable development within our company and beyond and to better meet societal challenges. To this end, we collaborate with a wide range of organizations, companies, federations, and networks.

Through our sustainability strategy, we help **to solve challenges globally**, not just within these seven SDGs. With our management approaches and projects, we also support **SDG 4** (Quality education), **SDG 6** (Clean water and sanitation) and **SDG 7** (Affordable and clean energy).

Detailed information on our quantitative and qualitative contributions to the specific SDGs is provided in our [**interactive SDG tool**](#).

The SDG tool was not part of the [**audit with limited assurance**](#), conducted by the independent auditor Deloitte GmbH for our 2023 Sustainability Report.

Stakeholder dialogue

Engaging with our various stakeholders is crucial for us. Through this dialogue, we communicate our decisions and actions transparently in order to secure our social license to operate. We aim to unite divergent interests, as well as build and sustain trust.

Dialogue at various levels

Our key **stakeholders** include our employees, customers and business partners, various patients, the Merck family as the majority owner of the company, shareholders, and our suppliers. We pursue a continuous dialogue with our stakeholders and use this exchange to identify trends and developments in society and in our business fields so as to take them into account in our corporate responsibility endeavors.

Our stakeholders



We regularly conduct a systematic [materiality analysis](#) to learn about our **stakeholders' expectations**. In doing so, we identify the economic, social and environmental issues that are important to our stakeholders – and thus also to us.

We have established [guidelines and principles](#) for interactions with certain stakeholders, with a focus on compliance. For example, we have defined internal guidelines and review processes for [patient relationships](#), [interactions with healthcare stakeholders](#) and [business partnerships](#).

The Merck Sustainability Advisory Panel (MSAP), a group of external experts from various disciplines, has been advising us on the topic of sustainability since 2021. It enables our company to understand even more diverse stakeholder perspectives and helps us to develop our sustainability strategy further. More information on MSAP and its members can be found under [Sustainability strategy and goals](#).

We communicate regularly with our stakeholders through a variety of channels. For instance, we conduct stakeholder surveys and organize topic-specific dialogues at regional, national and international level. We also participate in discussions and informational forums as well as through our advocacy work and industry coalitions. Here are some examples of the dialogue formats used:

Employees

Employee engagement surveys

- [Our approach: Unlocking our collective potential](#)
- [Enabling our employees](#)

360 degree feedback

- [Embracing conversation and dialogue](#)

Intranet “EVA”

Career fairs

- [Supporting the next generation](#)
- [Attracting and inspiring key talent](#)

Patient organizations

Patient Advisory Boards (PAB) to engage patient organizations in our clinical research

- [Close dialogue with patients and advocacy groups](#)

Member of various initiatives on the quality and efficiency of clinical trials

- [Close dialogue with patients and advocacy groups](#)

Employee representatives

Involvement of local employee representatives in company decisions

- [Our commitment: Employee representatives](#)
- [A competitive compensation and benefits structure](#)

Science

Merck Ethics Advisory Panel (MEAP); Digital Ethics Advisory Panel (DEAP); TU Darmstadt

- [Merck Ethics Advisory Panel](#)
- [Digital Ethics Advisory Panel](#)
- [Fruitful strategic partnership](#)
- [Promoting the circular economy](#)

Communities

Discussion and information forums for residents in the vicinity of our sites

- [Roundtables and informational forums](#)

Healthcare systems

Collaborating with health authorities and other stakeholders as well as event series and network meetings

- [Engaging stakeholders](#)
- [Collaborating with patient and carer organizations](#)
- [Close dialogue with patients and advocacy groups](#)

Associations/Politics

Collaboration in working groups

- [Advocacy groups and industry coalitions](#)

Suppliers

Supplier surveys

- [Supply chain assessments and audits](#)
- [Auditing our mica supply chain](#)

Knowledge sharing

- [Ambassadors for sustainable procurement](#)

Shareholders

Annual General Meeting

- [Investor Relations](#)

Events for investor groups

- [Capital markets days](#)

Public authorities

Subject-specific cooperation

- [Pharmacovigilance in Access to Health](#)
- [Monitoring drug safety](#)

Further information on stakeholder dialogues can be found in the individual report chapters.

Roundtables and informational forums

We hold roundtable discussions and informational forums for local residents at our major sites. Since 1994, we have been holding an annual public planning forum in Darmstadt to discuss the development of our site with members of the city council, local authorities and the community.

Involvement in initiatives

We collaborate with an array of civic organizations and also participate in other [initiatives](#) that share our commitment to responsible corporate conduct, such as [Chemie³](#) and [Responsible Care®](#).

Advocacy groups and industry coalitions

We actively participate in the **political process** and advocate our positions and views by engaging policymakers in a direct dialogue as well as through our work with industry coalitions. The major national and international industry associations in which we are members and also hold positions include:

- The German Federation of Chemical Employers' Associations ([BAVC](#))
- The European Federation of Pharmaceutical Industries and Associations, ([EFPIA](#))
- The International Federation of Pharmaceutical Manufacturers & Associations ([IFPMA](#))
- The German Chemical Industry Association e. V. ([VCI](#))
- The European Chemical Industry Council ([Cefic](#))
- National Association of Manufacturers ([NAM](#))
- United States Chamber of Commerce ([USCC](#))
- Association of International Chemical Manufacturers ([AICM](#))

Political contributions

Our interactions with members of the political community focus on political dialogue, information exchange and open and transparent knowledge sharing. Our guidelines stipulate that our interactions and contributions must comply with all applicable laws and must never aim to inappropriately influence or compensate officials for political favors. Even if permitted by local law, we do not make contributions in the form of donations to or sponsorships of political parties or related organizations. Furthermore, we do not make donations to or sponsor holders of public office or candidates for such, nor do we make other types of financial contributions.

In the United States, political action committees (PACs) have been set up through which our employees can donate money to support political candidates and organizations. These are not donations made by our company, but rather contributions made by employees. The contributions donated are reported to the U.S. Federal Election Commission and are fully disclosed.

Materiality analysis

With our annual materiality analysis, we identify the social, economic and environmental issues that are of material importance to us and our stakeholders. In 2023, we closely examined for the first time the upcoming requirements of the European Sustainability Reporting standards (ESRS).

Identifying the material issues

We conduct an annual materiality analysis to identify sustainability topics that are particularly important to us. In this way, we determine the priorities for our sustainability management and our reporting. Our materiality analysis meets the requirements of the Global Reporting Initiative (**GRI**) reporting standard and also forms the basis for the materiality analysis of the CSR Directive Implementation Act (CSR-RUG). In 2023, we also addressed the upcoming requirements of the new EU Corporate Sustainability Reporting Directive (CSRD), which our company must comply with as of the 2024 reporting year, accompanied by the obligation to comply with the new ESRS reporting standards. Initial insights derived from these requirements were already incorporated into our analysis in 2023. For example, we compared our current material topics with the requirements of the ESRS and adapted the methodology for assessing actual and potential impacts.

In our analysis, we looked at actual as well as potentially positive and negative environmental, economic and social impacts of our business activities. In addition to internal data analyzed by us, the evaluation also included feedback from external stakeholders.

Similar to the previous year, we classified the negative impacts into four categories: low, moderate, significant, and critical. At the same time, we categorized the positive impacts as follows: low, moderate, significant, or substantial. We defined a topic as material if a positive or negative impact is classified as at least moderate in one of the steps of the value chain. The results of the materiality analysis were validated by the Merck Sustainability Board (MSB).

The following list contains all material topics including their actual or potential positive and negative impacts. Impacts identified as material are indicated with a checkmark.

Results of the materiality analysis

Compliance management

Value chain	Upstream	Own operations	Downstream
Positive impact:		✓	
Negative impact:	✓		

We take various measures to ensure that all employees have the opportunity to speak out anonymously and safely. In addition, we have numerous measures in place, such as policies, trainings and awareness campaigns. Therefore, we classify our potential positive impact in our own business as moderate.

Due to the nature of our business activities and the inevitable possibility of compliance-related risks, we classify the potential negative impact to be moderate in our upstream value chain and low in our own business. In response, our company aims to ensure that all business activities adhere to the relevant laws, regulations and ethical standards. In addition, we do not limit our compliance management to our own company; we also include suppliers and our interactions with sales parties such as commercial agents, distributors and dealers.

Chapter:

- Compliance management

Data protection & cyber security

Value chain	Upstream	Own operations	Downstream
Positive impact:		✓	✓
Negative impact:			✓

Concerning the topic data protection & cyber security we have comprehensive measures in place. We strive to safeguard the rights of any person whose data we process, including but not limited to our employees, patients, customers, and healthcare professionals. When it comes to cyber security, our company understands the importance of protecting our business from cybercrime and ensuring our information is secure from any associated internal and external risks. Therefore, we classify our actual positive impact to be substantial.

Due to the nature of our business activities, there is always the possibility of data-related risks. In response, our company aims to ensure that all business activities adhere to the relevant laws, regulations and ethical standards. In addition, we do not limit our compliance management regarding data protection & cyber security to the boundaries of our own company; we also include suppliers and our interactions with sales parties such as commercial agents, distributors and dealers. We strive to make all important information regarding our products and their use accessible to our consumers and end users. In doing so, it is important to respect the privacy of our users. Therefore, we classify our potential negative impact in our own business as low and in the downstream value chain as moderate.

Chapter:

- **Data protection & cyber security**

Interactions with health systems and responsible marketing

Value chain	Upstream	Own operations	Downstream
Positive impact:			✓
Negative impact:			✓

We believe that in order to achieve health for all, it is imperative to help health professionals make informed decisions about treatment paths while keeping patient benefit always at the center. We interact with healthy systems by implementing various capacity and awareness-building initiatives to contribute to medical advances that benefit patients and to fostering stronger health systems. Therefore, we classify our actual positive impact on interactions with health systems in the downstream value chain as substantial.

Healthcare stakeholders need up-to-date information on diseases and treatments while safeguarding their independence at the same time. Due to the nature of our business activities, there is always the possibility of compliance-related risks. In response, we aim to ensure that all business activities adhere to the relevant laws, regulations and ethical standards. Thus, we classify the potential negative impact on the topic of interactions with health systems to be moderate in our downstream value chain.

Chapter:

- **Responsible interactions with health systems**

Sustainable supply chain

Value chain	Upstream	Own operations	Downstream
Positive impact:	✓		
Negative impact:	✓		

We offer opportunities for training and creating awareness of standards that can have a positive influence on how suppliers operate. Further potential positive impacts arise from the stakeholder dialogue, and in particular the dialogue with suppliers, which addresses what support suppliers need and in what form. We therefore classify our actual positive impact on sustainable supply chain in the upstream value chain as moderate.

Due to the nature of our business, we classify the potential negative impact regarding working conditions, equal treatment and opportunities, other work-related rights (e.g. child labor, forced labor), and sustainable supply chain to be moderate in the upstream value chain. We have guidelines and measures in place to improve working conditions in the supply chain in addition to careful monitoring through regular assessments and audits. These measures reduce the potential for negative impacts within our supply chain. At the same time, the possibility for us to influence external organizations is more limited than within our own company.

Chapter:

- **Supply chain management**
- **Mica supply chain**

Human rights

Value chain	Upstream	Own operations	Downstream
Positive impact:	✓	✓	
Negative impact:	✓		

The Responsible Mica Initiative can be seen as an initial pilot project (deep dive) where a real attempt is made to make a positive difference in the supply chain. This relates in particular to the improvement of livelihoods and educational opportunities, which have an impact on basic human rights in the respective region. Further potential positive impacts arise from the stakeholder dialogue, and in particular the dialogue with suppliers, which also includes the issue of human rights, e.g. through the initiative Together for Sustainability. In our own business we have several policies and guidelines in place, such as our Social and Labor Standards Policy, that help to extensively ensure attentive management of the topic of human rights. We therefore classify our actual positive impact to be moderate in the upstream value chain and our potential positive impact to be significant in our own business.

When it comes to our global supply chains, we pay close attention to human rights risks. We expect our suppliers to exercise the greatest care in dealing with human rights. Unlike in our own business activities, we can often only have an indirect influence along our supply chain to prevent negative impacts. Our principles have been set out in Group-wide policies, which we use to derive measures to avoid negative impacts within the supply chain. We use our human rights due diligence approach to prevent and mitigate human rights risks and have integrated a Human Rights Charter and a Supplier Code of Conduct. Our projects and activities, such as the Responsible Mica Initiative and community empowerment show efforts to reduce human rights risks in the supply chain that also go beyond compliance with supply chain laws. We classify our potential negative impacts with regard to human rights in the upstream value chain as moderate and in our own business and the downstream value chain as low.

Chapter:

- **Human rights**

Clinical studies

Value chain	Upstream	Own operations	Downstream
Positive impact:		✓	✓
Negative impact:		✓	✓

We conduct our clinical studies in compliance with high ethical and scientific standards, going beyond the minimum legal requirements and implementing patient-focused drug development that more actively involves patients, caregivers and their advocates. These activities ultimately improve the healthcare people receive and enable the delivery of new treatments for people worldwide. In addition, we make our research studies available to the public and other institutions to enhance the efficiency and effectiveness of medicine and treatments globally. Therefore, we classify the potential positive impact of our ethical conduct in the field of clinical studies in our own business and our downstream value chain to be significant.

We address the potential risks of non-compliance and non-adherence with international laws through measures such as implementing strict standards, policies, audits, and country selections. We therefore classify the potential negative impacts in our own business as well as our downstream value chain to be moderate.

Chapter:

- Clinical studies

Animal welfare

Value chain	Upstream	Own operations	Downstream
Positive impact:		✓	✓
Negative impact:	✓	✓	✓

We are developing and commercializing various technologies and systems in order to replace the use of animals by alternatives step-by-step, and eventually entirely. We also engage in external partnerships to promote animal welfare beyond our own company and contract research organizations and foster transparency in animal research communication. Additionally, we are involved in developing sustainable technologies, such as cultured meat, which could eventually support a global transition towards more sustainable nutrition systems and reduced meat consumption (and interlinked health and environmental impacts). Furthermore, we are working to replace fetal bovine serum and other animal-derived products with animal-free alternatives, such as the animal-free test kits (e.g. PyroMAT) which replaced an animal test. The Life Science business sector also is involved in animal-free antibody production (e.g. the ZooMAb and Capricorn projects). Therefore, we classify our potential positive impact within our own business and in the downstream value chain on animal welfare as significant.

The use of animals is often a legal and regulatory requirement across many areas of our business to ensure the quality, safety and efficacy of our products and processes. Consequently, our use of animals inevitably creates

an actual negative impact. We have implemented the 4Rs for animal-based research (replacement, reduction, refinement, and responsibility) and have set ourselves the ambitious goal of phasing out animal use and replacing animals with better alternatives on a long-term basis. Until we achieve this goal, we accept the ethical standards as defined in our quality documents in animal science and welfare. We classify the actual negative impact on animal welfare in our own business and in our upstream value chain to be critical. In the upstream value chain, we cannot guarantee the same animal welfare as in our own business.

Chapter:

- **Animal welfare**

Bioethics

Value chain	Upstream	Own operations	Downstream
Positive impact:		✓	
Negative impact:			

The Merck Ethics Advisory Panel for Science and Technology (MEAP) enables our various business units to adequately address (bio)ethical issues that arise in connection with our scientific and technological innovations. Through our work, we demonstrate how bioethical principles and guidelines can be considered and integrated in scientific and technological progress in a corporate context. The MEAP provides ethically sound guidance – especially for cases of scientific and technological progress that are not yet covered by existing guidelines. With guidelines such as the Genome Editing Principle or the Stem Cell Principle, we help to establish ethical positions beyond the boundaries of our company and thus assess our potential positive impact on bioethics as moderate within our own business.

Our company is committed to ethical research. When we advise on innovations from a bioethical perspective, questions may well arise that go far beyond the applicable legislation. Such issues often only come to light after an in-depth ethical analysis. Therefore, there is a risk that we may not always behave in a bioethically correct manner along our value chain. Our goal is to minimize these potential negative impacts by developing clear guidelines and establishing regulations for bioethical issues. Thus, we consider the potential negative impacts in our upstream and downstream value chain as well as in our own business to be low.

Chapter:

- **Bioethics**

Digital ethics

Value chain	Upstream	Own operations	Downstream
Positive impact:	✓	✓	
Negative impact:			

Through our CoDE and the Digital Ethics Advisory Panel (DEAP), we address ethical issues regarding the area of data & digital. We thus have a positive cross-border impact, which sets an example for the further development of ethical standards beyond our company. Overall, we classify our potential positive impact on digital ethics within our upstream value chain and in our own business to be moderate.

Non-compliance with digital-ethical standards poses risks for people and the environment. We use various initiatives to support digital ethics and classify the potential negative impacts in our upstream value chain as well as in own business as low.

Chapter:

- Digital ethics

Innovation and R&D

Value chain	Upstream	Own operations	Downstream
Positive impact:		✓	✓
Negative impact:	✓	✓	

Our products, namely our medicines and our biological and chemical innovations that utilize the latest technologies, have an actual positive impact on human progress and global health. To develop pioneering solutions that have a positive impact on society and support organic growth, Merck is exploring transformative technologies beyond core products and markets. We therefore classify the actual positive impact concerning innovation and R&D in our own business and in our downstream value chain to be substantial.

Researching, innovating and manufacturing new products creates a negative environmental footprint owing to the use of a large variety of resources. We reduce this impact through internal measures, such as using more sustainable raw materials and packaging and by researching innovative and sustainable materials. Therefore, we classify the potential negative impact on this topic to be moderate in the upstream value chain and our own business and low in the downstream value chain.

Chapter:

- Sustainable innovation & technology
- Sustainable Products & Packaging: Life Science
- Sustainable Products & Packaging: Healthcare
- Sustainable Products & Packaging: Electronics

Access to Health

Value chain	Upstream	Own operations	Downstream
Positive impact:			✓
Negative impact:			✓

We strive to make health solutions available, affordable and accessible to all. As part of our commitment, we are implementing our Access Strategy for low- and middle-income countries (LMICs) to fulfill our ambition to serve over 170 million patients per year in these countries by 2030. For non-communicable diseases (such as cancer indications and endocrine disorders), we are committed to offering equitable pricing and to strengthen health systems. We aim to, firstly, make our existing innovative therapies available to more countries and patients and, secondly, to launch our healthcare innovations in LMICs within 12 months after the first global launch. For the neglected tropical disease, schistosomiasis, we apply an integrated approach towards the elimination of the disease as a public health problem by 2030. We also engage in the fight against malaria. On top of that, we want to enable patients and health professionals to make informed decisions about treatment paths. Thus, we are implementing several initiatives to build health capacity and awareness in LMICs. Therefore, we classify our actual positive impact on access to health in the downstream value chain of our existing products and innovations as substantial.

We are committed to health for all. Through our Access Strategy for low- and middle-income countries, we aim to increase the impact of our healthcare innovations and existing products, such as therapies for cancer and endocrine disorders, through access efforts in those countries. We continue to engage in the fight against schistosomiasis and malaria. We also invest in local initiatives to strengthen health systems and improve access to health.

We recognize that these are extremely difficult and complex challenges, which is why we take a collaborative approach with our partners and stakeholders in all our access initiatives. Considering these, we classify our potential negative impact on the topic of access to health in our downstream value chain to be moderate.

Chapter:

- **Global health**
- **Innovation sharing**
- **Health capacity & awareness**

Prices of medicines

Value chain	Upstream	Own operations	Downstream
Positive impact:			✓
Negative impact:			

As part of our commitment to health for all, we will implement our Access Strategy to reach millions of patients in low- and middle-income countries. Our holistic approach includes a focus on affordability. We are working to

prevent cost from becoming a barrier to treatment. Therefore, we adapt our medicine prices according to people's ability to pay in different geographic and socioeconomic segments. We are committed to fair, flexible and sustainable pricing – both within and across countries. We therefore adapt our prices based on local market considerations, such as unmet medical and treatment needs, health system capacity as well as infrastructure and socioeconomic standards. Therefore, we classify our actual positive impact on prices of medicine in the downstream value chain of our healthcare portfolio as substantial.

We strive to make health solutions affordable and accessible and collaboratively work with partners and stakeholders to speed up access to quality health solutions for all – focusing on low-and middle-income countries. As part of these efforts, we have implemented patient access programs and our equitable pricing policy to enable more patients to afford our product portfolio. When taking our measures and projects into account, we classify our potential negative impact on the topic of prices of medicines in our downstream value chain as low.

Chapter:

- **Prices of medicines**

Chemical product safety

Value chain	Upstream	Own operations	Downstream
Positive impact:		✓	✓
Negative impact:	✓	✓	✓

Our commitment to chemical product safety is one of the cornerstones of our business as we process and handle hundreds of thousands of hazardous chemicals. We continuously improve our activities around product safety to the benefit of the environment as well as our customers and employees. In addition, we proactively and regularly develop, assess and implement new safety-related data and information and adapt our risk mitigation measures accordingly. Regarding chemical product safety, we consequently classify our actual positive impact in our own business and in our downstream value chain to be substantial.

Many of our chemical products have intrinsic hazardous properties. To mitigate potential negative impacts of hazardous chemicals, we have strict guidelines and measures in place to ensure safe working conditions. For users of our products, we provide the necessary information for dealing with hazardous substances safely. Some uncertainty exists regarding the state of chemical product safety at the supplier level. Therefore, we classify our potential negative impact on the topic of chemical product safety for the upstream value chain to be significant. In our own business as well as in the downstream value chain we classify our potential negative impact to be moderate.

Chapter:

- **Chemical product safety**

Patient safety

Value chain	Upstream	Own operations	Downstream
Positive impact:			✓
Negative impact:			✓

We collaborate with health authorities in low- and middle-income countries to help improve national pharmacovigilance systems and operating environments. We implement pharmacovigilance measures widely around the world even in countries without pharmacovigilance regulations. In 2022, we included the topic of patient safety in the update of our Supplier Code of Conduct, which we published in 2023. Therefore, we classify our potential positive impact on the topic in the downstream value chain to be significant.

Patient safety is fundamental to delivering quality health services and therefore has high relevance throughout the Healthcare business sector. Our company follows international guidance, standard procedures and all relevant pharmacovigilance regulations to mitigate the potential negative impacts on patient safety. It is the nature of medicinal products to bear intrinsic safety risks while providing treatment benefits to patients. Considering the therapeutic areas of our product portfolios, we classify the potential negative impact on the topic of patient safety in our downstream value chain as moderate.

Chapter:

- Patient safety

Product-related crime

Value chain	Upstream	Own operations	Downstream
Positive impact:			✓
Negative impact:			✓

Our actions and initiatives to reduce the risks associated with product-related crime often exceed the minimum legal requirements. For example, we support authorities in detecting and resolving cases of product-related crime. We also provide training for employees and business partners to strengthen their competencies in detecting product-related crime. Overall, we classify our potential positive impact in our downstream value chain to be moderate.

Illegal, counterfeit and substandard medicines pose a significant risk to public health and chemicals may be misused for criminal purposes such as manufacturing illicit drugs. We have enacted various measures to mitigate the risk of product-related crime. However, we classify the potential negative impact in our downstream value chain to be significant.

Chapter:

- Product-related crime

Working Conditions for employees

Value chain	Upstream	Own operations	Downstream
Positive impact:		✓	
Negative impact:			

We are enhancing our attractiveness as an employer, for instance by creating flexible working environments and taking beneficial measures for our employees extending well beyond compliance with national laws worldwide. Further, our activities aim to ensure the safety of the people who work for us since we continuously assess and reduce safety risks. Through training measures, we are also raising awareness both of occupational hazards and behaviors that promote health and safety. By taking various measures, we encourage our employees to live a healthy lifestyle. Therefore, we classify our potential positive impact on the topics of working conditions in our own business as significant.

Poor working conditions (including occupational health and safety) and a negative working environment can negatively impact quality and productivity. Further, a poor work-life balance may be detrimental to employees' physical, mental and emotional well-being. For this reason, we have implemented several charters, policies and standards to create an attractive and healthy working environment for all employees, including competitive compensation structures. Therefore, we classify our potential negative impact on the topic working conditions for our employees in our own business as low.

Chapter:

- Career with us
- Corporate culture
- Health & safety

Equal treatment and opportunities for all

Value chain	Upstream	Own operations	Downstream
Positive impact:		✓	
Negative impact:			

Our aspiration to build an inclusive culture in which employees feel welcome and valued extends well beyond compliance with existing laws and regulations. We have taken clear commitments on DE&I to hold ourselves accountable and have realized numerous initiatives to underpin our commitments, for example a global gender pay equity review or inclusive leadership training seminars offered to all people managers. In addition, we have more than 60 internal DE&I employee groups and networks worldwide that actively contribute to our DE&I strategy. Therefore, we classify our potential positive impact on the topic of equal treatment and opportunities for all in our own business as significant.

Disrespecting equal opportunities and non-discrimination can lead to human rights violations in the workplace and therefore have potential negative impacts on humans and society. Our efforts to promote and support

diversity, equity, inclusion, non-discrimination, and LGBTQI+ rights are extensive. Therefore, we classify our potential negative impact on equal treatment and opportunities for all in our business as low.

Chapter:

- **Diversity, equity & inclusion**

Climate Action

Value chain	Upstream	Own operations	Downstream
Positive impact:	✓	✓	
Negative impact:	✓	✓	✓

We are in the early stages of a long carbon reduction journey. Therefore, we are investigating and implementing a variety of mitigation measures to significantly reduce our carbon footprint. In our upstream value chain, we have a supplier decarbonization program in place to reduce GHG emissions. Furthermore, we have set incentives for our own workforce to increase their use of green mobility and, with our Green Fleet pilot, we are increasing the number of charging stations to expand the charging infrastructure for e-mobility. On top of that, various activities and targets are being implemented to reduce our process-related emissions and we are striving to increase our share of energy gained from renewable resources. Overall, we classify our potential positive impact within our upstream value chain as significant and in our own business regarding climate change and energy as moderate. Within our downstream value chain, no potential or actual positive impact was identified.

Company-specific greenhouse gas (GHG) emissions (Scope 1 and 2) contribute to global environmental degradation. Overall, the GHG emissions associated with our purchased goods and services (part of Scope 3) represent the largest share of our total carbon footprint. We classify our actual negative impact on the topic climate action (including climate change and energy) to be critical in the upstream value chain. In the Electronics business sector, we classify the actual negative impact to be critical in our own business and in the downstream value chain. For our Life Science and Healthcare business sectors of our own business and our administration, we classify our actual negative impact on the topic climate action to be significant.

Chapter:

- **Climate Action**

Water management

Value chain	Upstream	Own operations	Downstream
Positive impact:			
Negative impact:	✓	✓	✓

With respect to our water management activities, we have strong mitigating measures in place. These are primarily aimed at complying with regulations. Moreover, our goal is to bring our effluents to the predicted no

effect concentration (PNEC). Consequently, we classify the actual positive impact concerning water management to be low.

As a manufacturer of chemical and pharmaceutical products, we require significant volumes of water. The extraction of water reduces its availability in the natural environment and for other water users. Additionally, there is always a risk of negatively impacting the health and viability of ecosystems due to wastewater discharge and the potential pollution of water and soil. We have many initiatives in place to reduce our impact on water quality and availability. For example, we have implemented strict global standards and requirements at all of our manufacturing sites for wastewater treatment. Some of these requirements also go beyond our own business, such as the Responsible Minerals Sourcing Charter, which requires suppliers to have wastewater management systems and processes in place. These activities mitigate our negative impacts. We classify our actual negative impact to be moderate in our upstream value chain and in our own business. In the downstream value chain, we classify our potential negative impact to be moderate.

Chapter:

- **Water management**

Circular economy, waste & recycling

Value chain	Upstream	Own operations	Downstream
Positive impact:		✓	✓
Negative impact:	✓	✓	✓

Regarding circular economy, waste and recycling, we have strong mitigating measures in place. Beyond this, our Quantitative Green Chemistry Evaluator DOZN enables our customers to calculate the impact of a process or product using the 12 principles of green chemistry. Based on outcomes, a process or a material can be changed to help decrease the score. Furthermore, the investment activities of M Ventures may contribute to more sustainable production processes and products while supporting innovative business ideas. Partnerships with customers also help to develop more sustainable products and enable other industry players to act more sustainably. Therefore, we classify our potential positive impact on the topic of circular economy as well as waste and recycling to be moderate in our own business and to be substantial in the downstream value chain of our Life Science business sector.

The use of chemical and pharmaceutical products is associated with a high risk of improper use, improper disposal and, especially in developing countries, with weak waste management systems. For waste generated within our own operations, we mitigate negative impacts by adhering to regulations as well as fostering education, waste reduction and recycling initiatives. Therefore, we classify the potential negative impact in our upstream value chain and in our own business to be moderate. For the downstream value chain, we classify our actual negative impact as significant.

Chapter:

- **Waste & recycling**

Plant, process & transport safety

Value chain	Upstream	Own operations	Downstream
Positive impact:			
Negative impact:	✓	✓	✓

Our regulations and measures regarding plant, process and transport safety go beyond fulfilling local legal requirements. Our most important protective measure during storage and transport is our good quality and stable packaging. For the transport of dangerous goods, we only use tested packaging that meets the requirements of the Recommendations on the Transport of Dangerous Goods – Model Regulations (UN Orange Book). In our own business we classify our actual positive impact on the topic as low.

The pharmaceutical and chemical sectors are associated with a particular risk of pollution to air, soil and water through chemical spills. We have implemented strong standards and safe manufacturing practices at all sites worldwide to significantly reduce the risk of leakage into the environment at manufacturing locations during storage and transportation. Therefore, we classify our actual negative impact in the upstream value chain and in our own business to be moderate. In our downstream value chain, we classify the potential negative impact as moderate.

Chapter:

- **Plant, process & transport safety**

Biodiversity and ecosystems

Value chain	Upstream	Own operations	Downstream
Positive impact:			
Negative impact:			✓

To enhance biodiversity at our own sites, we have created several substitute habitats for flora and fauna. We classify the actual positive impact of these measures on the state of species and on the extent and condition of ecosystems within our own business to be low. Nevertheless, there is still a significant room for improvement in this area as it is necessary to extend our measures across the entire value chain.

Our production sites are predominantly located in industrial areas with low biodiversity value. Nevertheless, unintentional chemical leakages can contaminate soil or water resources and damage ecosystems. Due to our technical and organizational measures, we classify our potential negative impact on biodiversity and ecosystems to be low in our upstream value chain as well as in our own business; we classify it to be moderate in our downstream value chain.

Chapter:

- **Environmental protection**

The list of material topics did not change in comparison with 2022. In the analysis, “Tax Governance” once again fell below the materiality threshold. Nevertheless, we report on this topic as we expect tax-related disclosures to become increasingly important to our stakeholders. In addition, we provide information about our community engagement as we have been supporting and running a wide range of activities and campaigns for many years now. We would like to continue to play an active role in the community and to continue reporting on our outreach efforts.

Section 289c (3) of the German Commercial Code requires us to report on topics of double materiality in a combined **non-financial statement**. Pursuant to section 289c (3) of the German Commercial Code, the principle of double materiality requires companies to disclose non-financial information when the following two criteria are met: First, the information makes it possible to understand how the company’s business activities affect non-financial aspects. And second, the information is necessary to understand the company’s course of business, results of operations and economic position.