

Welcome to your CDP Water Security Questionnaire 2021

W0. Introduction

W0.1

(W0.1) Give a general description of and introduction to your organization.

For more than a century, Merck & Co., Inc. , Kenilworth, New Jersey, USA, a leading global biopharmaceutical company known as MSD outside of the United States and Canada, has been inventing for life, bringing forward medicines and vaccines for many of the world's most challenging diseases. Through our prescription medicines, vaccines, biologic therapies and animal health products, we work with customers and operate in more than 140 countries to deliver innovative health solutions. We also demonstrate our commitment to increasing access to health care through far-reaching policies, programs and partnerships. Today, our company continues to be at the forefront of research to advance the prevention and treatment of diseases that threaten people and communities around the world - including cancer, cardio-metabolic diseases, emerging animal diseases, Alzheimer's disease and infectious diseases including HIV and Ebola.

Through innovative research, groundbreaking partnerships and smarter processes, we are working to advance our performance in four priority areas: Access to Health, Environmental Sustainability, Employees, and Ethics & Transparency. With a focus on these priority areas across our entire organization, we are committed to leading the future of healthcare.

Our company reported total sales of \$47.99 billion during 2020 with 74,000 employees worldwide as of December 31, 2020. Further information is available at www.merck.com.

W0.2

(W0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date
Reporting year	January 1, 2020	December 31, 2020

W0.3

(W0.3) Select the countries/areas for which you will be supplying data.

Algeria
Argentina
Australia
Austria
Belarus
Belgium
Bermuda
Brazil
Bulgaria
Canada
Chile
China
China, Hong Kong Special Administrative Region
Colombia
Croatia
Cyprus
Czechia
Denmark
Ecuador
Egypt
Estonia
Finland
France
Germany
Greece
Guatemala
Hungary
Iceland
India
Indonesia
Ireland
Israel
Italy
Japan
Jordan
Kazakhstan
Latvia
Lebanon
Lithuania
Malaysia
Mexico
Morocco
Netherlands
New Zealand
Norway
Peru

Philippines
Poland
Portugal
Puerto Rico
Republic of Korea
Romania
Russian Federation
Serbia
Singapore
Slovakia
Slovenia
South Africa
Spain
Sweden
Switzerland
Taiwan, Greater China
Thailand
Turkey
Ukraine
United Kingdom of Great Britain and Northern Ireland
United States of America
Uruguay
Venezuela (Bolivarian Republic of)
Viet Nam

W0.4

(W0.4) Select the currency used for all financial information disclosed throughout your response.

USD

W0.5

(W0.5) Select the option that best describes the reporting boundary for companies, entities, or groups for which water impacts on your business are being reported.

Companies, entities or groups over which operational control is exercised

W0.6

(W0.6) Within this boundary, are there any geographies, facilities, water aspects, or other exclusions from your disclosure?

Yes

W0.6a

(W0.6a) Please report the exclusions.

Exclusion	Please explain
Small office and leased space.	Small offices and certain leased buildings are excluded from all sections of the report except for their estimated withdrawals and discharges in section W1.2B and W1.2h. We have estimated that the amount of water used at these facilities is approximately 3% of our total global water use.
Recent acquisitions	Recent acquisitions are excluded from all sections of the report except for their estimated withdrawals and discharges in section W1.2B and W1.2H. These facilities will be included in the future as sites become fully integrated to the company internal reporting processes.
Rainwater	Rainwater is excluded from our withdrawal volume but is included in our discharge volume in sections W1.2B and W1.2H. We recognize that because of this our water balance is off by about 10%, but with its inclusion it would only be about 5%. Rainwater is excluded as we do not have third-party verification of this data at this time. We will evaluate its inclusion in our third-party external data verification process for water withdrawal and discharge in the future.

W1. Current state

W1.1

(W1.1) Rate the importance (current and future) of water quality and water quantity to the success of your business.

	Direct use importance rating	Indirect use importance rating	Please explain
Sufficient amounts of good quality freshwater available for use	Vital	Important	Our manufacturing processes cannot operate without clean water. Thus, high-quality freshwater is a vital component in the manufacture of our pharmaceutical, biological, and animal health products. Surface and groundwater constituted about 64% of our water withdrawal in 2020 with the remaining 36% coming from public water supply. If we do not have access to enough good quality freshwater, there will be additional costs to purify water to an appropriate level needed to manufacture our products. It is also an important component for our external manufacturing partners, as well as our overall supply chain. Our company, and our supply chain, is expected to be even more dependent on good quality freshwater in the future as we shift to producing more biologics, which generally require more water than

			other types of pharmaceutical manufacturing processes.
Sufficient amounts of recycled, brackish and/or produced water available for use	Important	Important	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, about 1.1 million cubic meters of water was recovered, reused, or recycled at our facilities in 2020, which is equivalent to five percent of our total water use. Recycled (cooling) water is used as a primary means for heat removal for many of our manufacturing processes to reduce our water footprint and significantly reducing freshwater withdrawal. This strategy is also employed by our external manufacturing partners, as well as our overall supply chain. This dependency is expected to be about the same in our direct and indirect operations in the future.

W1.2

(W1.2) Across all your operations, what proportion of the following water aspects are regularly measured and monitored?

	% of sites/facilities/operations	Please explain
Water withdrawals – total volumes	100%	The Company measures and monitors water withdrawal volumes for all global manufacturing and research sites, and large office buildings. This is to ensure an accurate water balance is maintained and to track progress against our water use targets. Withdrawal volumes are measured either through utility bills, meters or through engineering estimates. Examples of measurement frequency would include continuous meters and monthly meter readings. While frequency of volume measurement varies site to site, water withdrawals are required to be entered quarterly by sites into an enterprise data collection and reporting software system as part of our internal Environmental Data Collection

		(EDC) process. The data is reviewed at the corporate level on a quarterly basis.
Water withdrawals – volumes by source	100%	The Company measures and monitors water withdrawal volumes by source for all global manufacturing and research sites, and large office buildings. This is to ensure an accurate water balance is maintained and to track progress against our water use targets. Withdrawal volumes by source are measured either through utility bills, meters or through engineering estimates. Examples of measurement frequency would include continuous meters and monthly meter readings. While frequency of volume measurement varies site to site, water withdrawals are required to be entered quarterly into an enterprise data collection and reporting software system as part of our internal Environmental Data Collection (EDC) process. This process differentiates withdrawals from surface water, groundwater, and public water suppliers. The data is reviewed at the corporate level on a quarterly basis.
Water withdrawals quality	100%	Our internal standard requires we maintain potable water supply in accordance with applicable regulatory requirements or World Health Organization (WHO) drinking water guidelines in the absence of local standards. Our facilities measure withdrawal quality where necessary in our operations. Any water used in our manufacturing or research processes is tested in accordance with the appropriate quality requirements. Frequency and method of measurement varies site to site but are done in accordance with required regulatory requirements.
Water discharges – total volumes	100%	The Company measures and monitors water discharge volumes for all global manufacturing and research sites, and large office buildings. This is to ensure an accurate water balance is maintained. Discharge volumes are measured either through utility bills, meters or through engineering estimates. Examples of measurement frequency would include continuous meters and monthly meter readings. While frequency of volume measurement varies

		<p>site to site, water discharges are required to be entered quarterly by sites into an enterprise data collection and reporting software system as part of our internal Environmental Data Collection (EDC) process. The data is reviewed at the corporate level on a quarterly basis.</p>
Water discharges – volumes by destination	100%	<p>The Company measures and monitors water discharge volumes by destination for all global manufacturing and research sites, and large office buildings. This is to ensure an accurate water balance is maintained. Discharge volumes are measured either through utility bills, meters or through engineering estimates. Examples of measurement frequency would include continuous meters and monthly meter readings. While frequency of volume measurement varies site to site, water discharges are required to be entered quarterly by sites into an enterprise data collection and reporting software system as part of our internal Environmental Data Collection (EDC) process. This process differentiates discharges to surface water from discharges to third party treatment facilities. The data is reviewed at the corporate level on a quarterly basis.</p>
Water discharges – volumes by treatment method	100%	<p>The Company measures and monitors water discharge volumes by treatment method for all global manufacturing and research sites, and large office buildings. This data is maintained at the operating sites and is monitored on an ongoing basis. Frequency and method of measurement vary by site. Tracking this information in our enterprise data collection system will be evaluated for the future.</p>
Water discharge quality – by standard effluent parameters	76-99	<p>The Company measures and monitors water discharge quality by standard effluent parameters for the majority of global manufacturing and research sites, and large office buildings. This data is maintained at the operating sites and is monitored on an ongoing basis. Frequency and method of measurement vary by site and may include but are not limited to continuous monitoring, periodic sampling, or other analytical methods in accordance with</p>

		permits and applicable regulatory and Company requirements.
Water discharge quality – temperature	51-75	Discharge temperature is only measured at a subset of sites where it is deemed critical to monitor or if required by permit or regulation. This data is maintained at the operating sites and is monitored on an ongoing basis. Frequency and method of measurement vary by to site. Methods may include but are not limited to continuous monitoring, periodic sampling or other analytical methods in accordance permits and, applicable regulatory and Company requirements.
Water consumption – total volume	100%	The Company measures and monitors water consumption volumes for all global manufacturing and research sites and large office buildings. This is to ensure an accurate water balance is maintained. Each operating site maintains a water balance identifying water consumption. Quantities are either metered or determined through engineering estimates. Frequency and method of measurement vary by site. Water consumption data are required to be entered quarterly by sites into an enterprise data collection and reporting software system as part of our Environmental Data Collection (EDC) process. The data is reviewed at the corporate level on a quarterly basis.
Water recycled/reused	100%	The Company measures and monitors water recycled/reused for all global manufacturing and research sites and large office buildings. Quantities are either metered or determined through engineering estimates. Frequency and method of measurement vary by site. Water recycled/reused is required to be entered quarterly by sites into an enterprise data collection and reporting software system as part of our Environmental Data Collection (EDC) process. The data is reviewed quarterly at the corporate level.
The provision of fully-functioning, safely managed WASH	100%	Our facilities provide fully-functioning WASH services to all workers as these services are deemed critical to the health of employees, the quality of our products, and the integrity of our

services to all workers		operations. Water withdrawals and discharges used for WASH services are included in the overall totals collected at each site. The Company internal standard requires that potable water supplies are maintained in accordance with applicable regulatory requirements or World Health Organization (WHO) drinking water guidelines in the absence of local standards.
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W1.2b

(W1.2b) What are the total volumes of water withdrawn, discharged, and consumed across all your operations, and how do these volumes compare to the previous reporting year?

	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Total withdrawals	20,486	About the same	<p>Our reported water withdrawals includes the amount that is measured and monitored (i.e. all of our global manufacturing and research sites, plus our large office buildings): 19,918 megaliters; and the estimated amount withdrawn from our small offices and leased facilities, which is calculated based on employee headcount data and applying standard assumptions for water use and discharge: 568 megaliters. We exclude rainwater collected at our sites (1,588 megaliters) from our total withdrawal because we do not include it in the scope of our limited data assurance for total withdrawal at this time (inclusion to be evaluated in the future). However, it is included in our discharge volume at the sites where it is measured. We recognize that as a result our water balance is off by about 10% but with its inclusion it would only be off by about 5%. We are committed to maintaining our global water use/withdrawals at or below 2015 levels through 2025. We achieved a 14% reduction of water withdrawals in 2020 versus the baseline year of 2015.</p> <p>Our thresholds for year over year comparison are as follows:</p> <ul style="list-style-type: none"> • "About the same = < 10% change from the prior year

			<ul style="list-style-type: none"> • "Lower/higher" = between 11-20% change from the prior year • "Much lower/much higher" = > 20% or more change from the prior year
Total discharges	18,052	About the same	<p>Our reported water discharge includes the amount that is measured and monitored (i.e. all of our global manufacturing and research sites, plus our large office buildings): 17,484 megaliters; and the estimated amount discharged from our small offices and leased facilities, which is calculated based on employee headcount data and applying standard assumptions for water use and discharge: 568 megaliters. We exclude rainwater collected at our sites (1,588 megaliters) from our total withdrawal because we do not include it in the scope of our limited data assurance for total withdrawal. However, it is included in this discharge volume at the sites where it is measured. We recognize that as a result our water balance is off by about 10% but with its inclusion it would only be off by about 5%. We are committed to maintaining our global water use/withdrawals at or below 2015 levels through 2025.</p> <p>Our thresholds for year over year comparison are as follows:</p> <ul style="list-style-type: none"> • "About the same" = < 10% change from the prior year • "Lower/higher" = between 11-20% change from the prior year • "Much lower/much higher" = > 20% or more change from the prior year
Total consumption	4,491	About the same	<p>Our reported water consumption includes the amount that is measured or calculated by engineering estimates at our global manufacturing and research sites, including our large office buildings. We do not estimate consumption at our small offices and leased facilities as it is deemed to be negligible. Water consumption is variable based on manufacturing and research activities year to year. We are committed to maintaining our global water use/withdrawals at or below 2015 levels through 2025. Our thresholds for year over year</p>

			<p>comparison are as follows:</p> <ul style="list-style-type: none"> • "About the same" = < 10% change from the prior year • "Lower/higher" = between 11-20% change from the prior year • "Much lower/much higher" = > 20% or more change from the prior year
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W1.2d

(W1.2d) Indicate whether water is withdrawn from areas with water stress and provide the proportion.

	Withdrawals are from areas with water stress	% withdrawn from areas with water stress	Comparison with previous reporting year	Identification tool	Please explain
Row 1	Yes	11-25	About the same	WRI Aqueduct	<p>We use the World Resources Institute's (WRI's) Aqueduct water-risk-assessment tool to measure and map our water risks across the enterprise globally (i.e. all of our global manufacturing and research sites, plus our large office buildings).</p> <p>Water withdrawn from areas rated by WRI Aqueduct Water Risk Atlas as being in areas of "High" or "Extremely High" Baseline Water stress are considered being from stressed areas. In 2020 the percent of water withdrawals in areas of water stress that rated as "extremely high" or high" was 17%.</p> <p>Our thresholds for year over year comparison are as follows:</p> <ul style="list-style-type: none"> • "About the same" = < 10% change from the prior year • "Lower/higher" = between 11-20% change from the prior

					<p>year</p> <ul style="list-style-type: none"> • "Much lower/much higher" = > 20% or more change from the prior year
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W1.2h

(W1.2h) Provide total water withdrawal data by source.

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Fresh surface water, including rainwater, water from wetlands, rivers, and lakes	Relevant	2,902	About the same	<p>Our company measures and monitors all of the fresh surface water we use as inputs to our processes as well as for heating/cooling and other utilities. We exclude site rainwater collected (1,588 megaliters) from our total withdrawal as it is not in the scope of our limited data assurance for total withdrawal at this time (inclusion to be evaluated in the future). However, it is included in our discharge volume at the sites where it is measured. We recognize that as a result our water balance is off by ~10% but with its inclusion it's only off by ~5%. Water withdrawal is variable based on manufacturing and research activities year to year. We are committed to maintaining our global water use/withdrawals at or below 2015 levels through 2025. Our thresholds for year over year comparison are as follows:</p>

				<ul style="list-style-type: none"> • "About the same" = < 10% change from the prior year • "Lower/higher" = between 11-20% change from the prior year • "Much lower/much higher" = > 20% or more change from the prior year
Brackish surface water/Seawater	Not relevant			We do not utilize brackish surface water/seawater and do not expect to in the future.
Groundwater – renewable	Relevant	10,304	About the same	<p>Our company measures and monitors all of the renewable groundwater we use as inputs to our processes as well as for heating/cooling and other utilities. Water withdrawal is variable based on manufacturing and research activities year to year. We are committed to maintaining our global water use/withdrawals at or below 2015 levels through 2025. Our thresholds for year over year comparison are as follows:</p> <ul style="list-style-type: none"> • "About the same" = < 10% change from the prior year • "Lower/higher" = between 11-20% change from the prior year • "Much lower/much higher" = > 20% or more change from the prior year
Groundwater – non-renewable	Not relevant			We do not utilize non-renewable groundwater and do not expect to in the future.
Produced/Entrained water	Not relevant			We do not utilize produced water and do not expect to in the future.
Third party sources	Relevant	7,280	About the same	Our company measures and monitors all of the third-party water we use as inputs to our

			<p>processes as well as for heating/cooling and other utilities. Our reported water from third party sources includes the amount that is measured and monitored (i.e. all of our global manufacturing and research sites, and large office buildings): 6,712 megaliters; and the estimated amount withdrawn from our small offices and leased facilities, which is calculated based on employee headcount data and applying standard assumptions for water use and discharge: 568 megaliters. Water withdrawal varies based on manufacturing and research activities year to year. We are committed to maintaining our global water use/withdrawals at or below 2015 levels through 2025. Our thresholds for year over year comparison are as follows:</p> <ul style="list-style-type: none"> • "About the same" = < 10% change from the prior year • "Lower/higher" = between 11-20% change from the prior year • "Much lower/much higher" = > 20% or more change from the prior year
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W1.2i

(W1.2i) Provide total water discharge data by destination.

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
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Fresh surface water	Relevant	11,464	About the same	<p>Our company measures and monitors all of our discharges to surface water. Water discharge is variable based on manufacturing and research activities year to year.</p> <p>Our thresholds for year over year comparison are as follows:</p> <ul style="list-style-type: none"> • "About the same" = < 10% change from the prior year • "Lower/higher" = between 11-20% change from the prior year • "Much lower/much higher" = > 20% or more change from the prior year
Brackish surface water/seawater	Relevant but volume unknown			We are currently evaluating the inclusion of this discharge destination in our enterprise data collection system. The volumes are not expected to be significant and are currently captured in our surface water discharge volume.
Groundwater	Not relevant			We do not discharge to groundwater and do not expect to in the future.
Third-party destinations	Relevant	6,588	About the same	<p>Our company measures and monitors all of our discharges to third party destinations, such as municipal treatment plants. Our reported water discharged to third party destinations includes the amount that is measured and monitored (i.e. all of our global manufacturing and research sites, plus our large office buildings): 6,020 megaliters; and the estimated amount discharged from our small offices and leased facilities, which is calculated based on employee headcount data and applying standard assumptions for water use and discharge: 568 megaliters.</p> <p>Water discharge is variable based on manufacturing and</p>

				<p>research activities year to year. Our thresholds for year over year comparison are as follows:</p> <ul style="list-style-type: none"> • "About the same" = < 10% change from the prior year • "Lower/higher" = between 11-20% change from the prior year • "Much lower/much higher" = > 20% or more change from the prior year
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W1.2j

(W1.2j) Within your direct operations, indicate the highest level(s) to which you treat your discharge.

	Relevance of treatment level to discharge	Please explain
Tertiary treatment	Relevant but volume unknown	Our company sites employ a variety of treatment methods to meet internal standards and regulatory requirements. We use a combination of secondary treatment, tertiary treatment, and other treatment technologies, such as advanced oxidation for the removal of active pharmaceutical ingredients (API). In addition, certain waters by nature do not require treatment. Because this is a new question in CDP 2020, our reporting systems are not fully aligned to the CDP treatment definitions. Tracking this information, as per the CDP treatment definitions, in our enterprise data collection system will be evaluated for the future. This information is currently maintained at the operating sites.
Secondary treatment	Relevant but volume unknown	Our company sites employ a variety of treatment methods to meet internal standards and regulatory requirements. We use a combination of secondary treatment, tertiary treatment, and other treatment technologies, such as advanced oxidation for the removal of active pharmaceutical ingredients (API). In addition, certain waters by nature do not require treatment. Because this is a new question in CDP 2020, our reporting systems are not fully aligned to the CDP treatment definitions. Tracking this information, as per the CDP treatment definitions, in our enterprise data collection system will be evaluated for the future. This information is currently maintained at the operating sites.

Primary treatment only	Relevant but volume unknown	Our company sites employ a variety of treatment methods to meet internal standards and regulatory requirements. We use a combination of secondary treatment, tertiary treatment, and other treatment technologies, such as advanced oxidation for the removal of active pharmaceutical ingredients (API). In addition, certain waters by nature do not require treatment. Because this is a new question in CDP 2020, our reporting systems are not fully aligned to the CDP treatment definitions. Tracking this information, as per the CDP treatment definitions, in our enterprise data collection system will be evaluated for the future. This information is currently maintained at the operating sites.
Discharge to the natural environment without treatment	Relevant but volume unknown	Certain waters by nature; for example, storm water, do not require primary, secondary, or tertiary treatment prior to discharge. Because this is a new question in CDP 2020, our reporting systems are not fully aligned to the CDP treatment definitions. Tracking this information, as per the CDP treatment definitions, in our enterprise data collection system will be evaluated for the future. This information is currently maintained at the operating sites.
Discharge to a third party without treatment	Relevant but volume unknown	Where on-site treatment is not provided, wastewater is discharged to local municipal wastewater treatment facilities that have the technology and capacity to treat our wastewater. The majority of our facilities discharge to freshwater environments. Many of our company sites discharge wastewaters to a third party where additional treatment is provided to meet internal standards and regulatory requirements. Because this is a new question in CDP 2020, our reporting systems are not fully aligned to the CDP treatment definitions. Tracking this information, as per the CDP treatment definitions, in our enterprise data collection system will be evaluated for the future. This information is currently maintained at the operating sites.
Other	Relevant but volume unknown	Our company sites employ a variety of treatment methods to meet internal standards and regulatory requirements. A subset of our sites utilize treatment methods for removal of wastewater containing active pharmaceutical ingredients that do not meet the definition of primary treatment, secondary treatment, or tertiary treatment. Because this is a new question in CDP 2020, our reporting systems are not fully aligned to the CDP treatment definitions. Tracking this information, as per the CDP treatment definitions, in our enterprise data collection system will be evaluated for the future. This information is currently maintained at the operating sites.

W1.4

(W1.4) Do you engage with your value chain on water-related issues?

Yes, our suppliers

Yes, our customers or other value chain partners

W1.4a

(W1.4a) What proportion of suppliers do you request to report on their water use, risks and/or management information and what proportion of your procurement spend does this represent?

Row 1

% of suppliers by number

Less than 1%

% of total procurement spend

1-25

Rationale for this coverage

For the past four years we have conducted supplier sustainability surveys using the Pharmaceutical Supply Chain Initiative (PSCI) Survey. As members of PSCI, using a standard supplier survey, we are working with other pharmaceutical companies to encourage supplier engagement on water use and reduction opportunities and goals. While we have many thousands of suppliers, we used our previously modelled input/output spend analysis data to identify suppliers with the biggest impact. Our company had a 2018 target to collect water use data from at least 90% of our strategic suppliers with the highest environmental impacts. We continued to collect this data from the same type of suppliers as a best practice through 2020. In 2020, the survey was sent to approximately 113 of our strategic suppliers with a 96 percent response rate. While representing approximately 18% of our procurement spend, this subset makes up less than 1% of our total number of suppliers. The indicator used to assess success for our 2020 goal was if we engaged with our strategic suppliers and requested that they identify water-use reduction opportunities and for our 2025 goal is that >90% of strategic suppliers will set their own water-use reduction goal.

In our Supplier 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.

Impact of the engagement and measures of success

Success is measured by progress on our public supplier engagement commitments. Water data was collected from 96% of our high-impact strategic suppliers in 2020, exceeding our commitment to engage with 90% of our strategic suppliers and requesting them to identify water use reduction opportunities.

Approximately 45% of our strategic suppliers have set public or internal water use reduction goals. We utilize these results to identify opportunities for supplier engagement and development around improved water stewardship.

Additionally, questions related to water-risk are asked as part of the PSCI survey. This information enables us to better understand supplier awareness and management of water-related risks, in this instance specifically related to baseline water stress. Seventy-eight percent of these strategic suppliers have performed a water risk evaluation. Of those suppliers who have performed an evaluation, 33% operate in water stressed areas. The remaining 67% percent determined they were not operating in water stressed areas. Of those suppliers who do operate in areas of high stress, 63% have long-term management strategies in place.

Comment

W1.4b

(W1.4b) Provide details of any other water-related supplier engagement activity.

Type of engagement

Onboarding & compliance

Details of engagement

Requirement to adhere to our code of conduct regarding water stewardship and management

% of suppliers by number

1-25

% of total procurement spend

1-25

Rationale for the coverage of your engagement

Our Business Partner Code of Conduct, along with our company's Supplier Performance Expectations, are communicated to existing and potential third-party suppliers and are included in requests for information, proposals and quotes as well as in our purchase-order terms and conditions. We select suppliers that share our commitment to our values and principles, as defined in our Business Partner Code of Conduct and Supplier Expectations Letter. In addition, we participate in the Pharmaceutical Supply Chain Initiative's Pharmaceutical Industry Principles. Our Global Sourcing & Procurement and Supplier Management team is responsible for maintaining the standards by which suppliers are identified, qualified and managed. Supplier selection and management follow a robust sourcing management process, in which environmental sustainability, economic inclusion and supplier diversity principles are integrated throughout each stage. Throughout the supplier life cycle, our company

establishes expectations, assesses risk, supports supplier development and manages performance.

Impact of the engagement and measures of success

Using a risk-based approach, supplier assessments and audits are conducted based on multiple factors (e.g., risk profile, engagement and activity type and geography). The assessments and audits evaluate a supplier's ability to meet both industry and our own standards for quality, safety and ethical business practices. While wastewater discharge and overall environmental compliance are included in our internal pre-assessment and these audits, issues specifically related to water risk are not yet incorporated. The standard PSCI supplier self-assessment questionnaire does include questions related to understanding if the supplier is operating in a high stress area. In some instances, this questionnaire is used as a surrogate for our internal pre-assessment.

Where assessments and audits identify deficiencies or opportunities for improvement, we monitor suppliers to ensure that our concerns are addressed in a responsible and compliant manner. As part of our oversight and monitoring, we have established mechanisms to report, track and monitor supplier plans to address nonconformance and help drive continued improvement.

Comment

W1.4c

(W1.4c) What is your organization's rationale and strategy for prioritizing engagements with customers or other partners in its value chain?

Our company contributes to efforts surrounding water availability and quality in the areas in which we operate, consistent with being a signatory to the UN CEO Water Mandate. These efforts impact local communities, employees, as well as customers in these areas. They also work towards improving water availability and quality for our operations over the long term. Positive partner, community and employee feedback is an important indicator as to the success of this program. Since 2016 we have donated \$100,000 annual to a non-profit organization for a water project that improves water quality and/or quantity and enable collective action and community engagement in areas close to the facilities we operate. We encourage local employee involvement in the projects.

In 2020, we supported the Keystone 10 Million Tree Partnership project with funding for 100,000 trees through the organization One Tree Planted. This project is focused on planting trees in Pennsylvania to help protect the Chesapeake Bay. Over the years, the Chesapeake Bay has suffered degradation due to development and changing sea levels, as well as pollution. Planting trees will restore degraded areas as well as assist in the restoration and filtration of this sensitive water system. Planting of trees upstream of the bay in Pennsylvania will result in improvements in biodiversity, reduce pollution and benefit the local community. Our site located in Riverside, Pennsylvania, is within the Chesapeake Bay catchment.

For each project, an annual progress report is provided to us, summarizing the status and achievements of the project and its objectives.

W2. Business impacts

W2.1

(W2.1) Has your organization experienced any detrimental water-related impacts?

No

W2.2

(W2.2) In the reporting year, was your organization subject to any fines, enforcement orders, and/or other penalties for water-related regulatory violations?

Yes, fines, enforcement orders or other penalties but none that are considered as significant

W2.2a

(W2.2a) Provide the total number and financial value of all water-related fines.

Row 1

Total number of fines

0

Total value of fines

0

% of total facilities/operations associated

0

Number of fines compared to previous reporting year

About the same

Comment

In 2020, we had 3 water-related enforcement orders. No water-related fines were paid in 2020.

W3. Procedures

W3.3

(W3.3) Does your organization undertake a water-related risk assessment?

Yes, water-related risks are assessed

W3.3a

(W3.3a) Select the options that best describe your procedures for identifying and assessing water-related risks.

Direct operations

Coverage

Full

Risk assessment procedure

Water risks are assessed as a standalone issue

Frequency of assessment

Annually

How far into the future are risks considered?

3 to 6 years

Type of tools and methods used

Tools on the market

Tools and methods used

WRI Aqueduct

WWF Water Risk Filter

Comment

All of our existing and acquired facilities are assessed for water risk. We currently use the WRI Aqueduct Water Risk Atlas as our primary tool to assess internal risk. Our primary focus is on the Aqueduct water risk indicator “Baseline Water Stress.” Sites with a rating of “high” or “extremely high” risk and water withdrawal of greater than 100,000 m³ (as this set of sites comprises over 80% of our water withdrawal). However, sites with lower withdrawal are also assessed and water management plans will be put in place as needed. The WWF Water Risk Filter is used as a secondary source to evaluate operational risk for sites in areas of high stress.

In 2020 we collaborated with WRI to perform a catchment specific study of our sites with high withdrawal and risk. Sites were deprioritized when results concluded less baseline water stress risk than indicated by Aqueduct. This study was performed following the UN CEO Water Mandate Target Setting Guidance and will continue in 2021 for sites with lower withdrawal. This exercise enabled us to better prioritize facilities and catchments for water stewardship activities and lay the foundation for potential future water targets in priority locations. Globally, two priority sites have been identified through this methodology and have water conservation plans in place. We work with a third-party water use expert to evaluate opportunities for water use reductions at priority sites, resulting in site-specific water management plans.

Supply chain

Coverage

Partial

Risk assessment procedure

Water risks are assessed as a standalone issue

Frequency of assessment

Annually

How far into the future are risks considered?

3 to 6 years

Type of tools and methods used

Other

Tools and methods used

Other, please specify

Pharmaceutical Supply Chain Initiative (PSCI) Survey

Comment

For the past four years we have conducted supplier sustainability survey using the Pharmaceutical Supply Chain Initiative (PSCI) Survey. As members of PSCI we are working with other pharmaceutical companies to encourage supplier engagement on water use and reduction opportunities and goals using a standard supplier survey. While we have many thousands of suppliers, we used our modelled input/output spend analysis data to identify suppliers with the biggest impact and survey them.

Questions related to water-risk are asked as part of the PSCI survey. This information enables us to better understand supplier awareness and management of water-related risks, in this instance specifically related to baseline water stress. Seventy-eight percent of these strategic suppliers have performed a water risk evaluation. Of those suppliers who have performed an evaluation, 33% operate in water stressed areas. The remaining 67% percent determined they were not operating in water stressed areas. Of those suppliers who do operate in areas of high stress, 63% have long-term management strategies in place.

Other stages of the value chain

Coverage

None

Comment

W3.3b

(W3.3b) Which of the following contextual issues are considered in your organization's water-related risk assessments?

	Relevance & inclusion	Please explain
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<p>Water availability at a basin/catchment level</p>	<p>Relevant, always included</p>	<p>We consider this a highly relevant contextual issue for our organization across all stages of our operations and value chain. Having enough water is critical to the manufacture of pharmaceuticals. This is also true for our suppliers, who provide many of the raw materials and precursors for our products. Current and emerging water availability issues are included in our assessment. All our existing and acquired facilities are assessed for water risk. We currently use the WRI Aqueduct Water Risk Atlas as our primary tool to assess internal risk. Our primary focus is on the Aqueduct water risk indicator “Baseline Water Stress.” Sites with a rating of “high” or “extremely high” risk and water withdrawal of greater than 100,000 m3 (as this set of sites comprises over 80% of our water withdrawal). However, sites with lower withdrawal are also assessed and water management plans will be put in place as needed. The WWF Water Risk Filter is used as a secondary source to evaluate operational risk for sites in areas of high stress.</p> <p>In 2020 we collaborated with WRI to perform a catchment specific study of our sites with high withdrawal and risk. Sites were deprioritized when results concluded less baseline water stress risk than indicated by Aqueduct. This study was performed following the UN CEO Water Mandate Target Setting Guidance and will continue in 2021 for sites with lower withdrawal.</p> <p>This exercise enabled us to better prioritize facilities and catchments for water stewardship activities and lay the foundation for potential future water targets in priority locations.</p> <p>We use the data from the PSCI survey related to baseline water stress to evaluate the risk for our strategic suppliers. As per our Business Partner Code of Conduct, business partners shall operate in an environmentally responsible and efficient manner to minimize adverse impacts on the environment. Additionally, business partners are expected to conserve natural resources and engage in activities aimed at reducing water usage, energy consumption and greenhouse gas emissions. Partners shall have systems in place to quantify the amount of water used, energy consumed, and greenhouse gases emitted by their operations.</p>
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<p>Water quality at a basin/catchment level</p>	<p>Relevant, always included</p>	<p>High quality water is critical to the manufacture of pharmaceuticals, and it often needs to be purified further to meet the quality standards expected for our products. Water discharge quality is also relevant, and our company considers compliance with all local regulations a foundational aspect of doing business. Continued compliance with these regulations is monitored through our internal audit program as well as self-assessment by site management. In accordance with our water public policy, we are working to understand the water challenges in the communities in which we operate, determine how our operations impact those locations, and identify appropriate water management practices for protecting and improving local water quality.</p> <p>As part of the detailed assessment performed in 2020 by WRI (please see Section 3.3a and above) contextual water quality aspects, specifically industrial discharge and nutrients, were evaluated for our priority sites (i.e., sites with the greatest water withdrawal and which are in high stress areas). We also employed the use of the WWF Water Risk Filter (basin and operational risk filters) to evaluate contextual water quality aspects in these basins. Through our water program we believe this risk associated with this aspect is being sufficiently addressed and mitigated.</p> <p>Attention to water quality for withdrawals and discharge also applies to our suppliers, who provide many of the raw materials and precursors for our products. As per our Supplier Code of Conduct, business partners shall operate in an environmentally responsible and efficient manner to minimize adverse impacts on the environment. Wastewater discharge and overall environmental compliance are included in our internal supplier pre-assessment and these periodic critical supplier audits.</p> <p>Current and emerging water quality issues are included in our assessment for direct operations and suppliers.</p>
<p>Stakeholder conflicts concerning water resources at a basin/catchment level</p>	<p>Relevant, always included</p>	<p>Access to high quality water is crucial to the manufacture of our products, therefore any stakeholder conflict that could jeopardize supply is taken seriously. Existing or potential stakeholder issues are considered when performing facility level and value chain risk assessments. We are currently not experiencing any stakeholder conflicts.</p>

		<p>As part of the risk assessment performed in 2020 (see Section 3.3a and above for more details), the contextual aspect of stakeholder conflicts was evaluated as part of the Management and Governance aspect was evaluated for our priority sites (i.e., sites with the greatest water withdrawal and in high stress areas). We also employed the use of the WWF Water Risk Filter (basin and operational risk filters) to evaluate this aspect. Through this assessment it was concluded that we are currently not experiencing any stakeholder conflicts concerning water resources at a basin/catchment level in our direct operations at these locations. This aspect also applies to our suppliers, who provide many of the raw materials and precursors for our products. As per our Business Partner Code of Conduct, business partners shall operate in an environmentally responsible and efficient manner to minimize adverse impacts on the environment. Additionally, business partners are expected to conserve natural resources and engage in activities aimed at reducing water usage, energy consumption and greenhouse gas emissions. Partners shall have systems in place to quantify the amount of water used, energy consumed, and greenhouse gases emitted by their operations.</p>
<p>Implications of water on your key commodities/raw materials</p>	<p>Relevant, always included</p>	<p>Lack of water or water of low quality can potentially impact the availability of key commodities and raw materials, so it is relevant to our internal and supply chain risk assessment. Both existing and emerging issues are considered. We use the data from the PSCI survey related to baseline water stress to evaluate the risk for our strategic suppliers. As per our Business Partner Code of Conduct, business partners shall operate in an environmentally responsible and efficient manner to minimize adverse impacts on the environment. Additionally, business partners are expected to conserve natural resources and engage in activities aimed at reducing water usage, energy consumption and greenhouse gas emissions. Partners shall have systems in place to quantify the amount of water used, energy consumed, and greenhouse gases emitted by their operations.</p>
<p>Water-related regulatory frameworks</p>	<p>Relevant, always included</p>	<p>Water-related regulatory frameworks have the potential to impact access to high quality water, so they are factored into our internal and supply chain risk assessments. Our company has an internal standard regarding regulatory surveillance, in which water-related regulatory frameworks are included. Regulatory surveillance is performed monthly at the corporate and local level to ensure we understand the</p>

		<p>impacts on our operations and our sites of any changing regulatory frameworks. Both existing and emerging regulatory frameworks are considered. As per our Business Partner Code of conduct, business partners shall comply with all applicable environmental regulations. All required environmental permits, licenses, information registrations and restrictions shall be obtained and their operational and reporting requirements followed.</p>
<p>Status of ecosystems and habitats</p>	<p>Relevant, always included</p>	<p>In accordance with our public water public policy, we assure that wastewater discharges from our manufacturing facilities meet all applicable requirements and exercise an appropriate level of care at our facilities globally, even if not required by local regulation. This includes an evaluation of the potential impact our products may have on ecosystems.</p> <p>As part of the detailed assessment performed in 2020 by WRI (please see Section 3.3a and above) contextual water quality aspects, specifically industrial discharge and nutrients, were evaluated for our priority sites (i.e., sites with the greatest water withdrawal and which are located in high stress areas). We also employed the use of the WWF Water Risk Filter (basin and operational risk filters) to evaluate contextual water quality aspects in these basins. Through our water program we believe this risk associated with this aspect is being sufficiently addressed and mitigated.</p> <p>Attention to water quality for withdrawals and discharge also applies to our suppliers, who provide many of the raw materials and precursors for our products. As per our Business Partner Code of Conduct, business partners shall operate in an environmentally responsible and efficient manner to minimize adverse impacts on the environment. Wastewater discharge and overall environmental compliance are included in our internal supplier pre-assessment and these periodic critical supplier audits.</p>
<p>Access to fully-functioning, safely managed WASH services for all employees</p>	<p>Relevant, always included</p>	<p>Access to WASH services is crucial to the manufacture of high-quality pharmaceuticals, in our facilities and in those of our suppliers. Our company considers access to water supply, adequate sanitation and hygiene when performing facility level risk assessments. Both existing and emerging issues are considered. As part of the detailed assessment performed in 2020 by WRI (please see Section 3.3a) contextual water quality aspects, specifically, WASH, was evaluated for our priority sites (i.e., sites with the greatest water withdrawal and which are located in high stress</p>

		areas). The detailed research indicated this is a lower contextual risk. Additionally, our internal standard requires we maintain potable water supply in accordance with applicable regulatory requirements or World Health Organization (WHO) drinking water guidelines in the absence of local standards.
Other contextual issues, please specify	Not relevant, included	Each year we evaluate contextual issues at our sites using the WRI Aqueduct water risk atlas. The evaluation includes all contextual aspects in the tool including those not identified above such as interseason variability (which we found to be relevant when looking specifically at baseline water stress) and flood risk, in accordance with the CEO Water Mandate Target-Setting Guidance. Similar contextual issues are relevant for our suppliers as well, but at this time information on them is not requested.

W3.3c

(W3.3c) Which of the following stakeholders are considered in your organization’s water-related risk assessments?

	Relevance & inclusion	Please explain
Customers	Relevant, always included	Impact to customers is a core consideration of our risk assessment process. Water risk is indirectly captured via patient access to medicines and our ability to reliably supply our customers.
Employees	Relevant, always included	Employees are considered in our risk assessment process via employee health and safety. Our employees live in the areas in which we operate therefore attention to water risk is warranted to ensure a healthy workforce.
Investors	Relevant, always included	Investor impact is considered in our risk assessment process. Investor expectations are rising with respect to how companies manage their approach to limited natural resources, like water. Access to water is included in our materiality assessment and goals are set to manage our use and risk.
Local communities	Relevant, always included	Our company strives to be a good corporate citizen in the areas in which we operate. This ensures our licence to operate. Local community issues are considered when performing facility level risk assessments.
NGOs	Relevant, always included	Our company is currently using tools from NGOs, such as the WRI Aqueduct Water Risk Atlas and the WWF Water Risk Filter, to assess water risk for internal sites as well as select

		external manufacturers and key suppliers. We interact with these stakeholders at the water-related conferences we attend and include their feedback in our approach to managing water risk.
Other water users at a basin/catchment level	Relevant, not included	Our company will engage with other water users at a local level if and when water risks for shared resources develop. We will also engage with other local water users as needed as we pursue our new water risk commitment to develop water management plans at our facilities in high water risk locations.
Regulators	Relevant, always included	Our company considers compliance with all local regulations a foundational aspect of doing business. Continued compliance with these regulations is monitored through our internal audit program as well as self-assessment by site management.
River basin management authorities	Relevant, always included	Our company follows all requirements established by river basins management authorities. In addition, we will engage with river basin management authorities if and when water risks for shared resources develop.
Statutory special interest groups at a local level	Not relevant, included	Our company does not operate in areas governed by statutory special interest groups.
Suppliers	Relevant, sometimes included	The impact of water-related risk on our company's operations and our key suppliers is considered as part of our risk management programs.
Water utilities at a local level	Relevant, always included	We evaluate water supply and wastewater treatment capacity and capability of local municipalities and service providers servicing our sites as part of facility risk assessment.
Other stakeholder, please specify	Not relevant, explanation provided	All relevant stakeholders are identified above. If additional stakeholders are identified in the future through our water-related risk assessments, they will be included in this report.

W3.3d

(W3.3d) Describe your organization’s process for identifying, assessing, and responding to water-related risks within your direct operations and other stages of your value chain.

Direction Operations:

Our company uses an Enterprise Risk Management (ERM) process whereby risks are identified by the facilities, corporate functions and business operations. The risks are assessed both quantitatively and qualitatively. Prioritization is based on potential impact and likelihood of occurrence. In this manner, the company's risks are brought together across all operations and the highest risks move forward and are identified in our Annual Report (Form 10-K), section 1.A. Risk Factors. These risks are included as part of the company's ERM process.

We use the WRI Aqueduct Water Risk Atlas tool (on an annual basis) to identify both facility specific and corporate level risks for water security. In addition, we also use the WWF Water Risk Filter to augment our data set for sites identified to be in areas of high-water stress. We use these identified tools because they are the leading ones for water risk assessment based on benchmarking conducted with stakeholders and peers. By utilizing these tools, we can evaluate all of the potential contextual risks in accordance with the CEO Water Mandate Target-Setting Guidance. Each year the WRI risk rating is entered into our enterprise environmental data collection system. We will continue to work with WRI and site SMEs to perform detailed bottom-up and top-down assessments to confirm if sites that are identified by the Aqueduct tool as being in high water stressed basins are in fact experiencing water stress.

Our internal water standard was revised in 2020 to require sites in areas with high baseline water stress to develop a water risk management plan. For these sites, we work with a third-party water use expert to evaluate opportunities for water use reductions at priority sites, resulting in site-specific water management plans. Sites then evaluate and prioritize the projects identified. They may then proceed to request funding for these projects through our Sustainability Capital Fund.

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

Supply Chain:

Questions related to water-risk are also asked as part of the PSCI survey. This information enables us to better understand supplier awareness and management of water-related risks, in this instance specifically related to baseline water stress. Seventy-eight percent of these strategic suppliers have performed a water risk evaluation. Of those suppliers who have performed an evaluation, 33% operate in water stressed areas. The remaining 67% percent determined they were not operating in water stressed areas. Of those suppliers who do operate in areas of high stress, 63% have long-term management strategies in place.

We also provide EQC information to suppliers that manufacture pharmaceutical compounds for us and have initiated detailed assessments of our suppliers to better understand and address potential impact.

In our Business Partner Code of Conduct we request that suppliers:

- Conserve natural resources and engage in activities aimed at reducing water usage
- Have systems in place to quantify the amount of water used

- Operate in an environmentally responsible and efficient manner to minimize adverse impacts on the environment

W4. Risks and opportunities

W4.1

(W4.1) Have you identified any inherent water-related risks with the potential to have a substantive financial or strategic impact on your business?

No

W4.1a

(W4.1a) How does your organization define substantive financial or strategic impact on your business?

Our annual report (form 10-K) defines "substantive" risks as those that could materially adversely impact the Company's business, financial condition, results of operations or prospects. Risks that rise to this level are captured and discussed in our 10-K in section 1.A, Risk Factors. For more information see <http://www.merck.com/investors/>

W4.2b

(W4.2b) Why does your organization not consider itself exposed to water risks in its direct operations with the potential to have a substantive financial or strategic impact?

	Primary reason	Please explain
Row 1	Risks exist, but no substantive impact anticipated	<p>In 2020, the WRI Aqueduct tool identified five manufacturing and/or research facilities being in areas with "extremely high" and nine in areas with "high" Baseline Water Stress. High water-use sites (i.e. greater than 100,000 m3 annually) were assessed further through a study with WRI, which provided information on the steps and data required to assess exposure to water-related business risks around selected catchments and facilities. Sites were deprioritized when results of the detailed catchment-specific studies with WRI indicated lesser risk than was indicated by the Aqueduct tool.</p> <p>This exercise enabled us to better prioritize facilities and catchments for water stewardship activities and lay the foundation for potential future water targets in priority locations. Globally, two priority sites have been identified through this methodology and have water conservation plans in place. We work with a third-party water use expert to evaluate opportunities for water use reductions at priority sites, resulting in site-</p>

	<p>specific water management plans. Thus, there is no substantive impact anticipated in our direct operations.</p> <p>Existing and acquired sites will continue to be monitored for risk according to the established methodology as general practice. Sites with a rating of “high” or “extremely high” risk and water withdrawal of less than 100,000 m3 will also be further assessed and water management plans will be put in place as needed.</p> <p>The facilities that use the most water in our network are U.S.-based. Of these, two are in areas of “high” Baseline Water Stress according to the Aqueduct tool but were identified as only medium risk based on the results of WRI deep-data dive water risk assessment.</p>
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W4.2c

(W4.2c) Why does your organization not consider itself exposed to water risks in its value chain (beyond direct operations) with the potential to have a substantive financial or strategic impact?

	Primary reason	Please explain
Row 1	Risks exist, but no substantive impact anticipated	<p>Although we have identified suppliers that operate facilities in areas of high water stress, determined by the WRI Aqueduct Water Risk tool, potential supply interruptions at these sites are not expected to have a substantive financial or strategic impact on the company. For the past four years we have conducted supplier sustainability survey using the Pharmaceutical Supply Chain Initiative (PSCI) Survey. As members of PSCI, using a standard supplier survey, we are working with other pharmaceutical companies to encourage supplier engagement on water use and reduction opportunities and goals. While we have many thousands of suppliers, we used our previously modelled input/output spend analysis data to identify suppliers with the biggest impact. In 2020, the survey was sent to approximately 113 of our strategic suppliers with a 96 percent response rate. While representing approximately 18% of our procurement spend, this subset makes up less than 1% of our total number of suppliers. Questions related to water-risk are asked as part of the PSCI survey. This information enables us to better understand supplier awareness and management of water-related risks, in this instance specifically related to baseline water stress. Seventy-eight percent of these strategic suppliers have performed a water risk evaluation. Of those suppliers who have performed an evaluation 33% operate in water stressed areas. The remaining 67% percent determined they were not operating in water stressed areas. Of those suppliers who do operate in areas of high stress, 63% have long-term management strategies in place. In our Business Partner Code of Conduct we request that suppliers conserve natural resources and engage</p>

		in activities aimed at reducing water usage. We also ask that they have systems in place to quantify the amount of water used.
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W4.3

(W4.3) Have you identified any water-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes, we have identified opportunities, and some/all are being realized

W4.3a

(W4.3a) Provide details of opportunities currently being realized that could have a substantive financial or strategic impact on your business.

Type of opportunity

Efficiency

Primary water-related opportunity

Improved water efficiency in operations

Company-specific description & strategy to realize opportunity

In general our sites employ a variety of technologies and techniques aimed at reducing our water footprint and improving operational performance. 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

In 2020, our Energy Capital fund became the Sustainability Capital Fund, expanding the scope of the funds to water and waste projects. It is used exclusively for sustainability projects at sites around the world that bring long-term value to the company and focus on carbon footprint, water use and solid waste reduction. The fund allocates up to \$12M per year, which allows us to adopt low carbon technology, better positions the company to respond to climate change, and supports a more circular economy. While the costs and benefits depicted below do not reflect all of the water efficiency projects throughout the company, it does include those investments made in 2020 as a result of the expansion of the use of funds from the Sustainability Capital Fund for water efficiency projects in 2020.

We use the WRI Aqueduct Water Risk Filter to assess baseline water stress at our facilities and determined that some of our facilities are located in areas of high water

stress, where improved water efficiency could be especially beneficial. For these sites, we work with a third-party water use expert to evaluate opportunities for water use reductions, resulting in site-specific water management plans. Sites then evaluate and prioritize the projects identified. They may then proceed to request funding for these projects through our Sustainability Capital Fund. Globally, two priority sites have been identified as being in areas of high risk and have water conservation plans in place. Projects identified through our risk assessments at these locations are being evaluated.

Estimated timeframe for realization

Current - up to 1 year

Magnitude of potential financial impact

Low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

400,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact

In 2020, we allocated approximately \$400,000 to three water projects through the Sustainability Capital Fund. The completed projects will result in \$148,000 in annual savings. Seventy five percent of the spend was for the installation of a smart irrigation system at one of our top five highest water use sites. The investment of \$300,000 will result in \$122,702 in annual savings and the reduction of thirteen million gallons of water used annually.

W6. Governance

W6.1


(W6.1) Does your organization have a water policy?

Yes, we have a documented water policy that is publicly available

W6.1a

(W6.1a) Select the options that best describe the scope and content of your water policy.

Scope	Content	Please explain
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<p>Row 1</p>	<p>Company-wide</p>	<p>Description of business dependency on water</p> <p>Description of business impact on water</p> <p>Description of water-related performance standards for direct operations</p> <p>Description of water-related standards for procurement</p> <p>Reference to international standards and widely-recognized water initiatives</p> <p>Company water targets and goals</p> <p>Commitment to align with public policy initiatives, such as the SDGs</p> <p>Commitments beyond regulatory compliance</p> <p>Commitment to water-related innovation</p> <p>Commitment to stakeholder awareness and education</p> <p>Commitment to water stewardship and/or collective action</p> <p>Acknowledgement of the human right to water and sanitation</p> <p>Recognition of environmental linkages, for example, due to climate change</p>	<p>The scope of our policy is companywide as water is critical for the discovery and production of our medicines and vaccines. We also recognize that water is critical to the health of people, the planet and our business. Water is at the core of sustainable development and is critical for socio-economic development, healthy ecosystems and human survival. It is vital for reducing the global burden of disease and improving the health, welfare and productivity of populations. The United Nations (UN) has declared access to safe drinking water and sanitation as a basic human right that is essential for population health. We are committed to achieving sustainable water management within our operations and our supply chain, and through our core business, partnerships, advocacy and employees, to reduce the impact of water-borne illness globally as part of our overall efforts to improve global health. Additionally, in recognition of the critical importance of water to our business and the global community, we have endorsed the UN CEO Water Mandate, a public commitment to adopt and implement a comprehensive approach to water management and have aligned our water program with its principles. We have also recognized “Clean Water and Sanitation” as one of the eight UN Sustainable Development Goals that we have prioritized as being closely aligned to our mission. We have developed water use targets and water risk management goals to guide the use of water in our operations and supply chain.</p> <p>In addition to the rationale above, our approach and public commitments related to water use and risk in direct operations and expectations for suppliers are detailed in our policy. Additionally, our approach on water quality is included, with a separate policy in place specific to Pharmaceuticals in the Environment. Lastly it identifies where our public disclosures surrounding these policies is located and highlights our collaboration with external partners and collective action commitments through the UNCEO Water Mandate. We recognize that access to WASH services is crucial to the manufacture of high quality pharmaceuticals, in our facilities and in those of our suppliers as stated in the rationale above.</p> <p> 1</p>
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 Policy_2019_Water-Stewardship_MERCK.pdf

W6.2

(W6.2) Is there board level oversight of water-related issues within your organization?

Yes

W6.2a

(W6.2a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for water-related issues.

Position of individual	Please explain
Other C-Suite Officer	The Executive Vice-President, General Counsel, and Corporate Secretary is directly responsible for water-related issues. This position is a direct report of the Chief Executive Officer and is one of eleven (11) Executive Committee members.

W6.2b

(W6.2b) Provide further details on the board's oversight of water-related issues.

	Frequency that water-related issues are a scheduled agenda item	Governance mechanisms into which water-related issues are integrated	Please explain
Row 1	Scheduled - some meetings	Other, please specify Monitoring and overseeing progress against goals and targets for addressing water-related issues	Our Vice President, Safety and Environment updates the board at least annually on our environmental, health and safety performance, including progress vs. our water-related goals.

W6.3

(W6.3) Provide the highest management-level position(s) or committee(s) with responsibility for water-related issues (do not include the names of individuals).

Name of the position(s) and/or committee(s)

Other C-Suite Officer, please specify

Executive Vice-President, General Counsel, and Corporate Secretary as member of the Environmental, Health, & Safety Council

Responsibility

Both assessing and managing water-related risks and opportunities

Frequency of reporting to the board on water-related issues

Annually

Please explain

The EHS Council is composed of senior-level executives (including the Executive Vice-President, General Counsel, and Corporate Secretary) representing all business units. It is responsible for overall EHS governance, leadership, and driving enterprise-wide EHS management and performance excellence. In 2020 they met four times, with additional communications as needed.

The Council’s responsibilities include:

- Establishing EHS strategy, policy and business risk mitigation controls
- Ensuring cross-divisional engagement in the design and implementation of EHS business processes
- Sponsoring and implementing a sustainability strategy
- Monitoring the EHS performance of the Company and establish continuous improvement targets
- Enhancing visibility and transparency of EHS risks, processes and issues

Outcomes from the meetings are reported to company’s Board of Directors and Executive Committee regarding progress on goals, objectives and metrics, as well as other material issues.

W6.4

(W6.4) Do you provide incentives to C-suite employees or board members for the management of water-related issues?

	Provide incentives for management of water-related issues	Comment
Row 1	No, and we do not plan to introduce them in the next two years	

W6.5

(W6.5) Do you engage in activities that could either directly or indirectly influence public policy on water through any of the following?

Yes, direct engagement with policy makers

Yes, trade associations

W6.5a

(W6.5a) What processes do you have in place to ensure that all of your direct and indirect activities seeking to influence policy are consistent with your water policy/water commitments?

Our company EHS regulatory surveillance process ensures proactive identification of new or changing water regulatory requirements in the jurisdictions where we operate. The process is administered by our Global Safety & Environment organization who also performs regulatory advocacy as needed on these topics. A review and approval process is in place for advocacy

efforts to ensure that to ensure that any advocacy efforts are aligned with our public policies and commitments. The review and approval process engages the appropriate subject matter experts as well as legal and policy staff as appropriate.

One of the key processes in place to ensure that all of our direct and indirect activities seeking to influence policy, consistent with our water policy and commitments, is our membership in two key advocacy associations, the Antimicrobial Resistance Industry Alliance (AMRIA) and the European Federation of Pharmaceutical Industries and Associations (EFPIA).

As of one the founding members of the AMRIA, an example of proactive engagement on Pharmaceuticals in the Environment is our commitment to the AMRIA charter. In the AMRIA members established discharge targets for antibiotics from manufacturing facilities consistent with our public policy statement.

In addition, we have representatives on EFPIA to ensure that all our indirect and direct activities will influence water and pharmaceutical policy consistent with our water and sustainability commitments.

W6.6

(W6.6) Did your organization include information about its response to water-related risks in its most recent mainstream financial report?

No, and we have no plans to do so

W7. Business strategy

W7.1

(W7.1) Are water-related issues integrated into any aspects of your long-term strategic business plan, and if so how?

	Are water-related issues integrated?	Long-term time horizon (years)	Please explain
Long-term business objectives	Yes, water-related issues are integrated	5-10	In 2020, internal water reduction targets were integrated into the company's key performance indicators for manufacturing facilities as part of a long-term business objective planning. Progress on these targets are evaluated quarterly and reported to manufacturing division leadership, where much of our water use lies. Additionally, our 2020 water risk goal was transitioned in standard business operations. Our internal water standard was revised to require any sites in areas of high baseline stress to perform a water risk assessment.

Strategy for achieving long-term objectives	Yes, water-related issues are integrated	5-10	In 2020, internal water reduction targets were integrated into the company's key performance indicators for manufacturing facilities as part of a long-term business objective planning. Progress on these targets are evaluated quarterly and reported to manufacturing division leadership, where much of our water use lies. Each site is required to develop a 5-year roadmap.
Financial planning	No, water-related issues not yet reviewed, but there are plans to do so in the next two years		In 2020, internal water reduction targets were integrated into the company's key performance indicators for manufacturing facilities as part of a long-term business objective planning. Progress on these targets are evaluated quarterly and reported to manufacturing division leadership, where much of our water use lies. As each site develops its 5-year roadmap financial planning is discussed. Water related issues are now being addressed through the Sustainability capital fund and are considered as part of our capital expansion.

W7.2

(W7.2) What is the trend in your organization's water-related capital expenditure (CAPEX) and operating expenditure (OPEX) for the reporting year, and the anticipated trend for the next reporting year?

Row 1

Water-related CAPEX (+/- % change)

41

Anticipated forward trend for CAPEX (+/- % change)

-7

Water-related OPEX (+/- % change)

Anticipated forward trend for OPEX (+/- % change)

Please explain

Our company has recently initiated several substantial capital projects to upgrade water infrastructure in addition to the previously reported capital fund associated with water infrastructure. The additional capital expenditure from these projects resulted in an increase in capital expenditure in 2020. The investment in 2021 is anticipated to be

about the same. Our company continues to invest in water related infrastructure at our operating sites and have expenditures forecasted.

W7.3

(W7.3) Does your organization use climate-related scenario analysis to inform its business strategy?

	Use of climate-related scenario analysis	Comment
Row 1	Yes	

W7.3a

(W7.3a) Has your organization identified any water-related outcomes from your climate-related scenario analysis?

Yes

W7.3b

(W7.3b) What water-related outcomes were identified from the use of climate-related scenario analysis, and what was your organization’s response?

	Climate-related scenarios and models applied	Description of possible water-related outcomes	Company response to possible water-related outcomes
Row 1	Other, please specify Internal methodology	Our company is working to understand what is involved in performing a comprehensive climate-related scenario analysis; however, select areas of our business have been subject to a review. Many of the effects of climate change have been analyzed as part of our general risk analysis or have been broken out into smaller studies such as the evaluation of water risk to our plant sites and or our supply chain, and the potential effects of sea level rise on our coastal sites. We have conducted a risk analysis on our warehousing operations in our second largest market, Japan. The scenarios included extreme weather events such as flooding and tsunamis.	We have upgraded existing facilities in Japan and have built new facilities there as a result of our analysis.

W7.4

(W7.4) Does your company use an internal price on water?

Row 1

Does your company use an internal price on water?

No, but we are currently exploring water valuation practices

Please explain

We are evaluating ways to determine the true cost of water. We are working with consultants and internal stakeholders.

W8. Targets

W8.1

(W8.1) Describe your approach to setting and monitoring water-related targets and/or goals.

	Levels for targets and/or goals	Monitoring at corporate level	Approach to setting and monitoring targets and/or goals
Row 1	Company-wide targets and goals Business level specific targets and/or goals Site/facility specific targets and/or goals Other, please specify Supply Chain	Targets are monitored at the corporate level Goals are monitored at the corporate level	Our global water strategy aims to achieve sustainable water management within our operations and our supply chain, which supports UN Sustainable Development Goal (SDG) 6, “Clean Water and Sanitation.” This is accomplished through: <ul style="list-style-type: none"> • Ensuring that our wastewater discharges comply with local and national standards, as well as internal company requirements • Understanding and controlling our operational water footprint • Managing water risk at our facilities and in our supply chain • Reporting publicly on our water use and goals We have established companywide water goals to help us manage water-related risks in our operations and supply chain. <ul style="list-style-type: none"> • By 2020, we will develop water conservation plans for sites in “high water risk” locations. • By 2025, we will maintain global water use at or below 2015 levels. • By 2020, we will engage with our strategic suppliers and request they identify water-use reduction opportunities. • By 2025, ≥ 90 percent of our strategic suppliers with the highest environmental impacts will set their own water-use reduction targets. The rationale for these goals is as follows: <ul style="list-style-type: none"> • Our aim is to decouple water use from growth and to maintain our global water use at or below 2015 levels. • We recognize contextual factors related to our water use and that it is important to mitigate water-related risks

		<p>specifically for priority site in basins of high stress. Therefore we also have goal to implement specific water conservation and management plans at the site/facility level in areas of elevated water stress.</p> <ul style="list-style-type: none"> • Modelling has shown that much of our water footprint is in our supply chain; therefore, we have instituted goals in this area as well. <p>Internally, we monitor the company, site, and business unit performance against these goals quarterly. Progress against the goals for the company is reported internally to the EHS Council and publicly via our ESG Progress Report annually.</p> <p>In 2020, internal water reduction targets were integrated into the company’s key performance indicators for manufacturing facilities as part of a long-term business objective planning. Progress on these targets are evaluated quarterly and reported to manufacturing division leadership, where most of our water use lies.</p> <p>The meaningful outcomes of these efforts are as follows:</p> <ul style="list-style-type: none"> • 14% reduction in water withdrawal compared to the 2015 baseline • Fully understand our water-related risk and focus our efforts to mitigate the risk with the completion of water conservation and management plans at priority sites • Translation of a goal into standard business practice with the inclusion for sites in high water stress basins to have water risk management plans in place, in our internal water standard • Justification for the expansion of the sustainability capital fund for water-related projects and immediate qualification of projects • Integration of sustainability (specifically water use reduction) into the company’s key performance indicator for manufacturing facilities
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W8.1a

(W8.1a) Provide details of your water targets that are monitored at the corporate level, and the progress made.

Target reference number

Target 1

Category of target

Water withdrawals

Level

Company-wide

Primary motivation

Water stewardship

Description of target

By 2025, we will maintain global water use at or below 2015 levels to ensure water security

Quantitative metric

% reduction in total water withdrawals

Baseline year

2015

Start year

2016

Target year

2025

% of target achieved

100

Please explain

We have achieved an 14% reduction of water withdrawals in 2020 versus the baseline year of 2015, therefore we are 100% on target.

W8.1b

(W8.1b) Provide details of your water goal(s) that are monitored at the corporate level and the progress made.

Goal

Other, please specify
Manage water use in stressed areas

Level

Company-wide

Motivation

Water stewardship

Description of goal

By 2020, we will develop water conservation plans for our sites in "high water risk" locations. Water stress is localized in nature due the contextual factors encountered

there, and so we will develop plans on a site- by-site basis, rather than a corporate one. We expect that achieving this goal will reduce our overall water use and will also reduce risk for individual facilities. We will perform water audits at selected sites with the help of consultants in order to develop tailored plans based on the identified opportunities.

Baseline year

2016

Start year

2016

End year

2020

Progress

In 2020, the WRI Aqueduct tool identified five manufacturing and/or research facilities being in areas with “extremely high” and nine in areas with “high” Baseline Water Stress. High water-use sites (i.e. greater than 100,000 m3 annually) were assessed further through a study with WRI, which provided information on the steps and data required to assess exposure to water-related business risks around selected catchments and facilities. Sites were deprioritized when results of the detailed catchment-specific studies with WRI indicated lesser risk than was indicated by the Aqueduct tool. This study was performed following the UN CEO Water Mandate Target Setting Guidance.

This exercise enabled us to better prioritize facilities and catchments for water stewardship activities and lay the foundation for potential future water targets in priority locations. Globally, two priority sites have been identified through this methodology and have water conservation plans in place. We work with a third-party water use expert to evaluate opportunities for water use reductions at priority sites, resulting in site-specific water management and conservation plans. The completion of site specific water conservation plans for priority sites in "high water risk" locations was the indicator used to assess progress. We therefore have achieved this goal.

Goal

Engagement with suppliers to help them improve water stewardship

Level

Company-wide

Motivation

Water stewardship

Description of goal

By 2020, we will engage with our strategic suppliers and request them to identify water use reduction opportunities. As stated above, modelling has shown that the majority of our water footprint is in our supply chain; therefore, we have instituted goals in this area.

This goal will reduce overall water use and will also reduce risk in our supply chain.

Baseline year

2016

Start year

2016

End year

2020

Progress

For the past four years we have conducted supplier sustainability survey using the Pharmaceutical Supply Chain Initiative (PSCI) Survey. As members of PSCI, using a standard supplier survey, we are working with other pharmaceutical companies to encourage supplier engagement on water use and reduction opportunities and goals. While we have many thousands of suppliers, we used our previously modelled input/output spend analysis data to identify suppliers with the biggest impact. Our company had a 2018 target to collect water use data from at least 90% of our strategic suppliers with the highest environmental impacts, which was achieved. We continued to collect this data from the same type of suppliers as a best practice through 2020. The indicator used to assess progress was our engagement with our strategic suppliers. In 2020, the survey was sent to approximately 113 of our strategic suppliers, with a 96 percent response rate. Through this engagement suppliers were requested to identify water use reduction opportunities and goals. We therefore have achieved this goal.

Goal

Engagement with suppliers to help them improve water stewardship

Level

Company-wide

Motivation

Water stewardship

Description of goal

By 2025, at least 90% of our strategic suppliers with the highest environmental impacts will set their own water use reduction targets. As stated above, modelling has shown that the majority of our water footprint is in our supply chain; therefore, we have instituted goals in this area also. This goal will reduce overall water use and will also reduce risk in our supply chain.

Baseline year

2016

Start year

2016

End year

2025

Progress

For the past four years we have conducted supplier sustainability survey using the Pharmaceutical Supply Chain Initiative (PSCI) Survey. In 2020, the survey was sent to approximately 113 of our strategic suppliers, with a 96 percent response rate. Through this engagement suppliers were requested to identify water use reduction opportunities and goals. The indicator used to assess progress is the percent of suppliers who identified they have water use opportunities and goals in place. We are on track for our 2025 supplier goal, as 45 percent of high impact suppliers have water use reduction targets.

W9. Verification

W9.1

(W9.1) Do you verify any other water information reported in your CDP disclosure (not already covered by W5.1a)?

Yes

 ERM CVS - Assurance Statement for Merck - 2021 CDP Water (ISSUED).pdf

W9.1a

(W9.1a) Which data points within your CDP disclosure have been verified, and which standards were used?

Disclosure module	Data verified	Verification standard	Please explain
W1 Current state	Total withdrawals, Total discharges, Withdrawals from third party sources	ISAE 3000	ERM conducted a limited assurance review in its capacity as an independent third party in accordance with the International Standard on Assurance Engagements ISAE 3000 for use in accreditation or other forms of recognition.

W10. Sign off

W-FI

(W-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

W10.1

(W10.1) Provide details for the person that has signed off (approved) your CDP water response.

	Job title	Corresponding job category
Row 1	Vice President, Global Safety and the Environment	EHS manager

W10.2

(W10.2) Please indicate whether your organization agrees for CDP to transfer your publicly disclosed data on your impact and risk response strategies to the CEO Water Mandate's Water Action Hub [applies only to W2.1a (response to impacts), W4.2 and W4.2a (response to risks)].

No

SW. Supply chain module

SW0.1

(SW0.1) What is your organization's annual revenue for the reporting period?

	Annual revenue
Row 1	47,994,000,000

SW0.2

(SW0.2) Do you have an ISIN for your organization that you are willing to share with CDP?

Yes

SW0.2a

(SW0.2a) Please share your ISIN in the table below.

	ISIN country code	ISIN numeric identifier (including single check digit)
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Row 1	US	58933Y1055
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SW1.1

(SW1.1) Could any of your facilities reported in W5.1 have an impact on a requesting CDP supply chain member?

No, CDP supply chain members do not buy goods or services from facilities listed in W5.1

SW1.2

(SW1.2) Are you able to provide geolocation data for your facilities?

	Are you able to provide geolocation data for your facilities?	Comment
Row 1	No, this is confidential data	

SW2.1

(SW2.1) Please propose any mutually beneficial water-related projects you could collaborate on with specific CDP supply chain members.

Requesting member

California Department of General Services (DGS)

Category of project

Other

Type of project

Other, please specify

None at this time

Motivation

N/A

Estimated timeframe for achieving project

Other, please specify

N/A

Details of project

N/A

Projected outcome

N/A

SW2.2

(SW2.2) Have any water projects been implemented due to CDP supply chain member engagement?

No

SW3.1

(SW3.1) Provide any available water intensity values for your organization’s products or services.

Product name

N/A

Water intensity value

0

Numerator: Water aspect

Other, please specify

N/A

Denominator

N/A

Comment

N/A

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	I am submitting to	Public or Non-Public Submission	Are you ready to submit the additional Supply Chain questions?
I am submitting my response	Investors Customers	Public	Yes, I will submit the Supply Chain questions now

Please confirm below

I have read and accept the applicable Terms