



Welcome to your CDP Water Security Questionnaire 2019

W0. Introduction

W0.1

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

Eastman is a global specialty materials company that produces a broad range of products found in items people use every day. With the purpose of enhancing life in a material way, Eastman works with customers to deliver innovative products and solutions while maintaining a commitment to safety and sustainability. The company's innovation-driven growth model takes advantage of world-class technology platforms deep customer engagement, and differentiated application development to grow its leading positions in attractive end-markets such as transportation, building and construction, and consumables. As a globally inclusive and diverse company, Eastman employs approximately 14,500 people around the world and serves customers in more than 100 countries. The company had 2018 revenues of approximately \$10 billion and is headquartered in Kingsport, Tennessee, U.S.A.

W-CH0.1a

(W-CH0.1a) Which activities in the chemical sector does your organization engage in?

Specialty organic chemicals

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, 2018	December 31, 2018

W0.3

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

Belgium
Brazil
China
Estonia
Finland
Germany
Japan
Malaysia
Mexico
Netherlands
Republic of Korea
Singapore
United Kingdom of Great Britain and Northern Ireland
United States of America

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 financial 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
Non-manufacturing, sales and administrative offices	Small, non-manufacturing water use

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	Water is a basic need for Eastman's manufacturing operations. Water is used in a variety of ways including: as a solvent, product ingredient, for steam generation, for cooling, and for washing. There is also a need for sufficient potable water for on-site employees and contractors. In addition, many of our suppliers are petrochemical and chemical based. Their water requirements are similar to Eastman's with similar uses. Eastman does not expect total water needs to change dramatically over time but do expect fresh water consumption to continue to be minimal and possibly decreased with a move to more recycled water.



Sufficient amounts of recycled, brackish and/or produced water available for use	Vital	Important	Eastman recycles water in manufacturing operations to reduce water demand, raw water treatment costs, and to enhance energy and water efficiency. Essential recycle operations include condensate recovery and reuse and recirculating cooling towers as well as reuse of water within some processes for heat recovery and reduced water usage. Eastman seeks to use lower quality water when available and expect these uses to increase over time relative to fresh water as fresh water becomes less accessible and as treatment of brackish water costs decrease over time. To promote the use of lower quality waters when available, Eastman uses "true cost" of water so that the addition of energy and chemicals to treat the water is considered in the water selected for use. In addition, many of our suppliers are petrochemical and chemical based. Their water requirements are similar to Eastman's with similar uses.
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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%	Manufacturing sites where Eastman has controlling interest are measured and monitored for water withdrawal volumes at the Corporate level annually. Sites measure and monitor based on meters, pump curve estimates, and monthly utility bills. We excluded non-manufacturing sites. Non-manufacturing sites would be less than 1% of our total withdrawals.
Water withdrawals – volumes from water stressed areas	100%	Eastman monitors water withdrawal volumes for manufacturing sites in areas that are indicated as extremely water stress according to World Business Council for Sustainable Development (WBCSD) Global Water Tool (GWT). The WBCSD GWT tool is used annually to verify the status of each site. Sites measure and monitor based on meters and monthly utility bills.
Water withdrawals – volumes by source	100%	Manufacturing sites where Eastman has controlling interest are measured and monitored for water withdrawal volumes at the Corporate level annually. Sites measure and monitor based



		on meters, pump curve estimates, and monthly utility bills. We excluded non-manufacturing sites. Non-manufacturing sites would be less than 1% of our total withdrawals.
Water withdrawals quality	76-99	Water withdrawal quality is monitored if the water source is not a municipal source with verified high-quality water. Site level monitors the quality of water withdrawals and the method of monitoring. Monitoring could include standard water quality criteria and the frequency would be determined by the site.
Water discharges – total volumes	100%	Manufacturing sites where Eastman has controlling interest are measured and monitored for water discharge volumes at the Corporate level annually. Sites measure and monitor based on meters, pump curve estimates, monthly utility bills and instrumentation. We excluded non-manufacturing sites. Non-manufacturing sites would be less than 1% of our total withdrawals.
Water discharges – volumes by destination	100%	Manufacturing sites where Eastman has controlling interest are measured and monitored for water discharge volumes at the Corporate level annually. Sites measure and monitor based on meters, pump curve estimates, monthly utility bills, and instrumentation. We excluded non-manufacturing sites. Non-manufacturing sites would have less than 1% of our total withdrawals.
Water discharges – volumes by treatment method	100%	Water discharges are monitored according to site permits which define the frequency of effluent monitoring required. Our facilities have invested in and operate wastewater treatment systems that are designed to effectively remove certain regulated materials from the effluent prior to returning treated water to the biosphere. Eastman complies with related government issued permits or licenses to demonstrate that the treated discharges do not degrade the receiving surface waters and that all applicable water quality standards are met.
Water discharge quality – by standard effluent parameters	100%	Water discharges are monitored according to site permits that define the frequency of effluent monitoring required. Our facilities have invested in and operate wastewater treatment systems that are designed to effectively remove certain regulated materials from the effluent prior to returning treated water to the biosphere. Eastman complies with related government issued permits or licenses to demonstrate that the treated discharges do not degrade the receiving surface waters and that all applicable water quality standards are met.



Water discharge quality – temperature	76-99	Water discharges are monitored according to site permits that define the frequency of effluent monitoring required. Our facilities have invested in and operate wastewater treatment systems that are designed to effectively remove certain regulated materials from the effluent prior to returning treated water to the biosphere. Eastman complies with related government issued permits or licenses to demonstrate that the treated discharges do not degrade the receiving surface waters and that all applicable water quality standards are met.
Water consumption – total volume	100%	Manufacturing sites where Eastman has controlling interest are measured and monitored for water consumption annually. Non-manufacturing sites are excluded. Non-manufacturing sites would have less than 1% of our total water withdrawals.
Water recycled/reused	Not monitored	Recycling and reusing water in manufacturing operations reduces water demand, raw water treatment costs, and enhances energy and water efficiency. Essential recycle and reuse operations include condensate recovery and reuse and recirculating cooling towers as well as reuse of water within some processes for heat recovery and reduced water usage. Eastman seeks to use lower quality water when available and expects these uses to increase over time as fresh water may be less accessible and as treatment of brackish water costs decrease over time.
The provision of fully-functioning, safely managed WASH services to all workers	100%	Eastman is committed to the United Nations' Sustainable Development Goals. One of the goals is to ensure access to water and sanitation. Employees have access to good quality drinking water, water for cleaning, and waste management that meets local laws and regulations.

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
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Total withdrawals	895,380	Higher	Total withdrawals are monitored for all manufacturing sites. Water withdrawal compared to 2017 was higher by 17%. Large rain events at some sites in 2018 resulted in larger withdrawals. At some sites, rainfall events are stored for later usage or are discharged to non-freshwater sources and are therefore counted as consumption per the CDP Technical Note on Water Accounting. Non-manufacturing sites would represent less than 1% of our total withdrawal volumes and are excluded from total withdrawal volumes. Near future water withdrawal volumes are projected to remain about the same but could vary depending on future expansions, divestitures, acquisitions and weather.
Total discharges	812,600	Higher	Total discharges are monitored for all manufacturing sites. Water discharges compared to 2017 was higher by 7%. Large rain events at some sites in 2018 resulted in larger discharges. At some sites, rainfall events are stored for later usage and are therefore counted as consumption per the CDP Technical Note on Water Accounting. Non-manufacturing sites would represent less than 1% of our total withdrawal volumes and are excluded from total discharge volumes. Near future water withdrawal volumes are projected to remain about the same but could vary depending on future expansions, divestitures, acquisitions and weather.
Total consumption	82,780	Higher	Total consumption is monitored for all manufacturing sites. Eastman's largest site represents 85 to 90% of the company's withdrawals and discharges. Instrumentation accuracy of discharge monitoring at this site is +/- 10%. In any year, the discharges from this site can be larger than the withdrawals, due to +/- 10% accuracy. Another contributing factor is large rain events at some sites that store water for future use resulting in a large consumption volume for these sites. Further explanation is provided in 1.2h and 1.2i. .

W1.2d

(W1.2d) Provide the proportion of your total withdrawals sourced from water stressed areas.

% withdrawn from stressed areas	Comparison with previous reporting year	Identification tool	Please explain
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Row 1	0.02	About the same	WBCSD Global Water Tool	Sites located in extremely water stressed areas indicated by WBCSD GWT represent less than 1% of total water withdrawals, discharges and consumption. The sites adhere to Eastman's Environmental Stewardship Policy and our Responsible Care(r) Principles. Both emphasize conservation of natural resources, use of material and energy efficiency, and strive to reduce emissions, discharges, and water through source reduction, reuse and recycling. The sites, where possible, use more abundant water, such as seawater, where possible. All sites located in these regions have conservation plans in place except for one. The exception is a site that does not consume water. All sites located in extremely stressed regions as indicated by the WBCSD Global Water Tool, consume minimum quantities of freshwater, less than 100 ML per 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	810,600	Higher	Total water withdrawals are monitored for manufacturing sites. Water withdrawals were 15% higher because of large rain events. The rain events at some sites are considered withdrawals because these sites store for later usage. One site experienced 11 inches above normal rainfall; the impact of the above normal rainfall resulted in an increase of 400% of freshwater withdrawal for that site compared to 2017. At some sites, rainfall events are stored for later usage and are therefore counted as consumption per the CDP Technical Note on Water Accounting.



Brackish surface water/Seawater	Relevant	65,190	Higher	Total water withdrawals are monitored for manufacturing sites. Water withdrawals of Brackish/Seawater increased 56%. Brackish/Seawater is used at sites, where possible, to minimize freshwater usage and consumption. One site in an extremely stressed area, uses seawater in closed loop cooling systems. The increase in withdrawals is due to an additional closed loop cooling system not previously reported.
Groundwater – renewable	Relevant	2,880	Lower	Total water withdrawals are monitored for manufacturing sites. Water withdrawals for renewable groundwater decreased by 56% compared to 2017. The decrease is attributed to less rainfall at a site that experienced record rainfall in 2017. Groundwater withdrawals represent less than 1% of total withdrawals.
Groundwater – non-renewable	Not relevant			
Produced/Entrained water	Not relevant			
Third party sources	Relevant	16,710	Higher	Total water withdrawals are monitored for manufacturing sites. Water withdrawals compared to 2017 are about 14% higher. The increase is attributed to increased demand.

W1.2i

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

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Fresh surface water	Relevant	733,080	Higher	Total discharges are monitored for manufacturing sites. Fresh surface water discharges are significant because we discharge about 90% of our total

				discharges to this destination. The total freshwater discharge increased by 5% in 2018 compared to 2017. Water discharges increased compared to 2017 because of large rain events at sites that discharge rainwater and store for later usage.
Brackish surface water/seawater	Relevant	65,190	Higher	Total discharges are monitored for manufacturing sites. Brackish surface water/seawater discharges are significant because we discharge almost 8% of our total discharges to brackish surface water/seawater. Water discharges compared to 2017 increased by about 38%. The increase is attributed a previously not reported closed loop cooling system.
Groundwater	Relevant	1,060	Higher	Discharges to groundwater renewable sources are about the same as compared to 2017. The discharges to groundwater was not reported in previous years.
Third-party destinations	Relevant	13,300	Higher	Total discharges are monitored for manufacturing sites. Third party destinations represent almost 2% of our total discharges. Water discharges compared to 2017 increased. The increase is attributed to increased demand, large rainfall events and a recalibrated effluent meter.

W-CH1.3

(W-CH1.3) Do you calculate water intensity for your activities in the chemical sector?

No, but we intend to do so within the next two years

W1.4

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

Yes, our customers or other value chain partners

W1.4c

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



Eastman engages with our customers to help them better understand the water footprint of our products and how the water footprint of our products compares to competing products in the marketplace.

W2. Business impacts

W2.1

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

Yes

W2.1a

(W2.1a) Describe the water-related detrimental impacts experienced by your organization, your response, and total financial impact.

Country/Region

Malaysia

River basin

Other, please specify

Kuantan (Sungai Kuantan)

Type of impact driver

Physical

Primary impact driver

Increased water scarcity

Primary impact

Increased capital costs



Description of impact

Eastman production was negatively impacted during four months of 2018 due to inadequate water supply.

Primary response

Secure alternative water supply

Total financial impact

935,000

Description of response

In 2018, Eastman provided \$250,000 to the government to repair a damaged levee that provided water to the site and other users. In addition, Eastman showed lost production equivalent to \$685,000. Before the government repaired the levee, Eastman secured an alternate water source and delivered water to the site by truck.

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

2

Total value of fines

777

% of total facilities/operations associated

5

Number of fines compared to previous reporting year

Higher

Comment

W3. Procedures

W-CH3.1

(W-CH3.1) How does your organization identify and classify potential water pollutants associated with its activities in the chemical sector that could have a detrimental impact on water ecosystems or human health?

Eastman knows that water is one of our planet's most valuable resources. We maintain pollution prevention and waste minimization programs designed to achieve ongoing reductions in the amount of contaminants that may be released to the water. A hierarchical waste management strategy is followed. This strategy emphasizes maximizing the conversion of raw materials into marketable products and minimizing the creation of waste. Increasing product yields is an ongoing, continuous priority for our research and manufacturing groups. When byproducts are produced they are evaluated and, if possible, used as feed stocks in other Eastman operations. When recovery or reuse options are exhausted, waste is evaluated and, based on treatability and regulatory constraints, assigned to an appropriate treatment unit. Our facilities have invested in and operate wastewater treatment systems that are designed to effectively remove regulated materials from the effluent prior to returning the treated water to the biosphere. Eastman complies with related government issued permits or licenses to demonstrate that the treated discharges do not degrade the receiving surface waters and that all applicable water quality standards are met. Our two largest sites, which are responsible for 90% of Eastman's water usage, have voluntarily conducted numerous river studies through a third party (the Academy of Natural Sciences) to ensure that Eastman is not having a negative impact on the rivers' water quality, plants, fish, macroinvertebrates, or insects.

W-CH3.1a

(W-CH3.1a) Describe how your organization minimizes adverse impacts of potential water pollutants on water ecosystems or human health. Report up to ten potential pollutants associated with your activities in the chemical sector.

Potential water pollutant	Value chain stage	Description of water pollutant and potential impacts	Management procedures	Please explain
BOD (Biological Oxygen Demand)	Direct operations	The amount of oxygen consumed by bacteria in the decomposition of organic material. BOD provides an index to assess the effect of discharged wastewater will have on the receiving environment. The higher the BOD value, the greater the amount of organic matter available for oxygen consuming bacteria. Oxygen consumed in the decomposition process denies aquatic organisms of the oxygen they need to live.	Compliance with effluent quality standards	Permits are designed by government authorities to be protective of water quality in the receiving streams and Eastman is required to monitor the effluents and submit reports. Eastman's compliance with these permits ensures that the company's discharges do not impact the quality of the receiving stream. Effluent monitoring programs are in place to collect water quality data for submittal to government authorities who establish and enforce protective limitations. Each site that operates a wastewater treatment facility uses wastewater management procedures and processes to ensure effluent limits are met. The majority of our manufacturing sites, are either certified to ISO14001, Responsible Care® Management System (RCMS) or RC®/ISO14001. RCMS is similar in scope to RC/ISO14001, both require third party verification to obtain a certificate of conformance.
COD (Chemical Oxygen Demand)	Direct operations	A measure of the amount of oxygen that could be consumed by reactions in a measured solution. COD provides an index to assess the effect discharged wastewater will have on the receiving	Compliance with effluent quality standards	Permits are designed by government authorities to be protective of water quality in the receiving streams and Eastman is required to monitor the effluents and submit reports. Eastman's compliance with these



		environment. Bacteria decompose organic materials using dissolved oxygen and this leads to a reduction of dissolved oxygen for other aquatic organisms.		permits ensures that the company's discharges do not impact the quality of the receiving stream. Effluent monitoring programs are in place to collect water quality data for submittal to government authorities who establish and enforce protective limitations. Each site that operates a wastewater treatment facility utilizes wastewater management procedures and processes to ensure effluent limits are met. The majority of our manufacturing sites, are either certified to ISO14001, Responsible Care® Management System (RCMS) or RC@/ISO14001. RCMS is similar in scope to RC/ISO14001, both require third party verification to obtain a certificate of conformance.
TSS (Total Suspended Solids)	Direct operations	TSS is the dry-weight of suspended particles that are not dissolved, in a sample of water that can be trapped by a filter that is analyzed using filtration. Suspended solids can clog fish gills, reduce light penetration which reduces the ability of algae to produce food and oxygen and could settle out as sediment that may smother bottom-dwelling organisms, cover breeding areas and smother eggs.	Compliance with effluent quality standards	Permits are designed by government authorities to be protective of water quality in the receiving streams and Eastman is required to monitor the effluents and submit reports. Eastman's compliance with these permits ensures that the company's discharges do not impact the quality of the receiving stream. Protection of human health and the environment is ensured by the effluent monitoring programs that are in place to collect water quality data for submittal to government authorities who establish and enforce protective limitations. Each site that operates a wastewater treatment facility utilizes wastewater management procedures and processes to ensure effluent limits are met. The majority of our manufacturing sites, are either certified to ISO14001, Responsible Care® Management System (RCMS) or RC@/ISO14001.



				RCMS is similar in scope to RC/ISO14001, both require third party verification to obtain a certificate of conformance.
pH	Direct operations	A measure of hydrogen ion concentration. Aquatic life is adapted to natural pH levels. Changes in pH could have negative impacts on the aquatic community.	Compliance with effluent quality standards	Permits are designed by government authorities to be protective of water quality in the receiving streams and Eastman is required to monitor the effluents and submit reports. Eastman's compliance with these permits ensures that the company's discharges do not impact the quality of the receiving stream. Protection of human health and the environment is ensured by the effluent monitoring programs that are in place to collect water quality data for submittal to government authorities who establish and enforce protective limitations. Each site that operates a wastewater treatment facility utilizes wastewater management procedures and processes to ensure effluent limits are met. The majority of our manufacturing sites, are either certified to ISO14001, Responsible Care® Management System (RCMS) or RC®/ISO14001. RCMS is similar in scope to RC/ISO14001, both require third party verification to obtain a certificate of conformance.
Temperature	Direct operations	A measure of the heat present in a substance. Temperature affects the dissolved oxygen levels in water, photosynthesis of aquatic plants, metabolic rates of aquatic organisms.	Compliance with effluent quality standards	Permits are designed by government authorities to be protective of water quality in the receiving streams and Eastman is required to monitor the effluents and submit reports. Eastman's compliance with these permits ensures that the company's discharges do not impact the quality of the receiving stream. Protection of human health and the environment is ensured by



				<p>the effluent monitoring programs that are in place to collect water quality data for submittal to government authorities who establish and enforce protective limitations. Each site that operates a wastewater treatment facility utilizes wastewater management procedures and processes to ensure effluent limits are met. The majority of our manufacturing sites, are either certified to ISO14001, Responsible Care® Management System (RCMS) or RC®/ISO14001. RCMS is similar in scope to RC/ISO14001, both require third party verification to obtain a certificate of conformance.</p>
Metals	Direct operations	Metals are essential to biochemical processes but in high concentrations are toxic to aquatic organisms.	Compliance with effluent quality standards	<p>Permits are designed by government authorities to be protective of water quality in the receiving streams and Eastman is required to monitor the effluents and submit reports. Eastman's compliance with these permits ensures that the company's discharges do not impact the quality of the receiving stream. Protection of human health and the environment is ensured by the effluent monitoring programs that are in place to collect water quality data for submittal to government authorities who establish and enforce protective limitations. Each site that operates a wastewater treatment facility utilizes wastewater management procedures and processes to ensure effluent limits are met. The majority of our manufacturing sites, are either certified to ISO14001, Responsible Care® Management System (RCMS) or RC®/ISO14001. RCMS is similar in scope to RC/ISO14001, both</p>



				require third party verification to obtain a certificate of conformance.
Nutrients	Direct operations	Phosphorus and nitrogen are the primary nutrients that in excessive amounts have a negative impact on aquatic environments leading to eutrophication.	Compliance with effluent quality standards	Permits are designed by government authorities to be protective of water quality in the receiving streams and Eastman is required to monitor the effluents and submit reports. Eastman's compliance with these permits ensures that the company's discharges do not impact the quality of the receiving stream. Protection of human health and the environment is ensured by the effluent monitoring programs that are in place to collect water quality data for submittal to government authorities who establish and enforce protective limitations. Each site that operates a wastewater treatment facility utilizes wastewater management procedures and processes to ensure effluent limits are met. The majority of our manufacturing sites, are either certified to ISO14001, Responsible Care® Management System (RCMS) or RC®/ISO14001. RCMS is similar in scope to RC/ISO14001, both require third party verification to obtain a certificate of conformance.
Ammonia	Direct operations	Ammonia, in high levels, builds up in aquatic organism's tissues and blood.	Compliance with effluent quality standards	Permits are designed by government authorities to be protective of water quality in the receiving streams and Eastman is required to monitor the effluents and submit reports. Eastman's compliance with these permits ensures that the company's discharges do not impact the quality of the receiving stream. Protection of human health and the environment is ensured by the effluent monitoring programs that are in place to



				<p>collect water quality data for submittal to government authorities who establish and enforce protective limitations. Each site that operates a wastewater treatment facility utilizes wastewater management procedures and processes to ensure effluent limits are met. The majority of our manufacturing sites, are either certified to ISO14001, Responsible Care® Management System (RCMS) or RC®/ISO14001. RCMS is similar in scope to RC/ISO14001, both require third party verification to obtain a certificate of conformance.</p>
Toxicity	Direct operations	Toxicity is measured varying parameters, exposing test species and comparing survival, growth and reproduction to a control test.	Compliance with effluent quality standards	<p>Permits are designed by government authorities to be protective of water quality in the receiving streams and Eastman is required to monitor the effluents and submit reports. Eastman's compliance with these permits ensures that the company's discharges do not impact the quality of the receiving stream. Protection of human health and the environment is ensured by the effluent monitoring programs that are in place to collect water quality data for submittal to government authorities who establish and enforce protective limitations. Each site that operates a wastewater treatment facility utilizes wastewater management procedures and processes to ensure effluent limits are met. The majority of our manufacturing sites, are either certified to ISO14001, Responsible Care® Management System (RCMS) or RC®/ISO14001. RCMS is similar in scope to RC/ISO14001, both</p>

				require third party verification to obtain a certificate of conformance.
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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 in an environmental risk assessment

Frequency of assessment

Annually

How far into the future are risks considered?

>6 years

Type of tools and methods used

Tools on the market

Tools and methods used

WBCSD Global Water Tool

WRI Aqueduct



Comment

WBCSD GWT tool is used in combination with World Resources Institute's Aqueduct™ tool. Risks are assessed using baseline stress, seasonal variability, and projected water stress using projections supplied by WBCSD GWT.

Supply chain

Coverage

Partial

Risk assessment procedure

Water risks are assessed in an environmental risk assessment

Frequency of assessment

Every two years

How far into the future are risks considered?

1 to 3 years

Type of tools and methods used

Other

Tools and methods used

Other, please specify
Ecovadis assessment

Comment

Eastman is a member of Together for Sustainability (TfS) which is a procurement-led initiative focused on elevating the sustainability of the supply chain for the chemical industry. Eastman is committed to responsible sourcing and is driving an initiative to focus on the top 80% of our direct spend and assess those suppliers regarding sustainability. Eastman is leveraging the widely accepted Ecovadis assessment which includes a specific focus on water management practices. The intent is to gain a better understanding of our suppliers' performance in this space and then to help drive improvements with suppliers where appropriate.



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
Water availability at a basin/catchment level	Relevant, always included	WBCSD GWT tool is used in combination with World Resources Institute’s Aqueduct tool. Risks are assessed using baseline stress, seasonal variability, projected water stress using projections supplied by WBCSD GWT. Water availability is a basic need for Eastman operations. Water availability is always considered in siting new facilities, operating existing facilities and for acquisitions.
Water quality at a basin/catchment level	Relevant, always included	Water quality withdrawal is monitored at the site/facility level and access to high water quality is a basic need for operations. Water discharges are monitored for effluent levels according to site specific permit limits.
Stakeholder conflicts concerning water resources at a basin/catchment level	Relevant, always included	Eastman maintains Community Advisory Panels (CAPs) at 14 key global sites, as well as various community care lines that are regularly monitored. In addition, Eastman has corporate social media accounts (e.g. Facebook, LinkedIn, Twitter, among others) that provide an avenue for soliciting and addressing public concerns. Any concerns identified through these mechanisms are addressed in a timely manner. The Community Advisory Panels are part of the Corporate Responsible Care® Program, RC14001, and ISO14001. The Corporate Responsible Care® Program, RC14001, and ISO14001 are third party audited.



Implications of water on your key commodities/raw materials	Not relevant, explanation provided	Water related issues have not risen to a substantive level for Eastman. Eastman has a diverse raw material and commodity supply chain which minimizes our risk when there are issues with severe weather events or other events beyond our control and our supply chain. In addition, our key suppliers are routinely risk assessed and our contracting process surface issues of this nature where they are dealt with contractually. Any new key supplier must submit a supplier information form that is located on our public website. These suppliers are asked if they are RC®14001 or ISO14001 certified. Both of these programs are externally audited and water management metrics and goals are key processes that are audited.
Water-related regulatory frameworks	Relevant, always included	By policy, Eastman complies with all laws and regulations including those that are water-related. Emerging issues relating to regulations and laws are monitored by a cross-functional, multi-site team to ensure that future risks are known and considered in our water policy. The Global Advocacy Network monitors proposed new regulations, changes to existing regulations, legislative issues that could impact regulatory frameworks and court decisions on environmental regulations including water.
Status of ecosystems and habitats	Relevant, sometimes included	Eastman has a standard operating procedure (SOP) on siting of new facilities. Our SOPs are applied to our sites around the world and are audited as part of the Corporate Responsible Care Management System®, RC®14001 and ISO14001. Part of the requirements of the SOP that apply to water issues and ecosystems is that the site selection and evaluation team will consider: historical climate data including potential impact, likelihood of occurrence and resources required for preparation for severe storms and other natural disasters, availability, capacity, and capability of waste treatment facilities, availability of fresh water via local rivers or aquifers, local streams or rivers potentially impacted as receiving streams, and the existence of local and regional sensitivities (e.g. protected areas such as wetlands and wildlife habitats) and necessary means to minimize their impact.
Access to fully-functioning, safely managed WASH services for all employees	Relevant, always included	Eastman is committed to the United Nations' Sustainable Development Goals. One of the goals is to ensure access to water and sanitation. Employees have access to good quality drinking water, water for cleaning, and waste management that meets local laws and regulations.
Other contextual issues, please specify		



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, sometimes included	Customers are considered in several ways. Eastman maintains Life Cycle Assessment (LCA) capabilities and can address customer questions about water use and product footprint enabling our customers to better understand their own risks. Eastman also produces many of our products at multiple sites therefore reducing risk of interrupted supply to our customers.
Employees	Relevant, always included	Eastman ensures that potable water is available on site for employees and contractors. Employees and contractors are trained on release reporting and are required to report any releases outside of primary containment. The release reporting requirement of employees and contractors mitigates risk to employee and contractor safety and the environment.
Investors	Relevant, always included	Eastman seeks to minimize investor risks through an understanding of water-related issues and the means for eliminating or at least minimizing their impact on company operations.
Local communities	Relevant, always included	Eastman maintains Community Advisory Panels (CAPs) at 12 key global sites, as well as various community care lines that are regularly monitored. In addition, Eastman has corporate social media accounts (e.g. Facebook, LinkedIn, Twitter) that provide an avenue for soliciting and addressing public concerns. Any concerns identified through these mechanisms are addressed in a timely manner. The Community Advisory Panels are part of the Corporate Responsible Care® Program, RC14001, and ISO14001. The Corporate Responsible Care® Program, RC14001, and ISO14001 are third party audited.
NGOs	Relevant, always included	Eastman advances large-scale, ecological work through its partnership with The Nature Conservancy, one of the world’s leading environmental organizations. We support the conservancy’s global efforts. And in close proximity to our corporate headquarters, we also locally support the conservancy’s research in nature preserves located in Shady Valley, Tennessee – a rare, high-elevation remnant of the last Ice Age and one of the most ecologically important regions in the Southern Appalachian Mountains. The ocean covers more than 70% of the Earth’s surface and is the source of about 97% of the water that



		<p>eventually falls on land as precipitation. Because we understand that the ocean and ocean life are fundamental to our climate, atmospheric weather, food, and energy system, Eastman and the Eastman Foundation are partnering in innovative ways to help develop, observe and measure ocean processes and educating future generations about their importance. We continue to collaborate with leading scientists at the Woods Hole Oceanographic Institution (WHOI), the world's largest nonprofit oceanographic institution. Eastman has specifically partnered with WHOI in the foundational development of its Center for Air Sea Interaction and Marine Meteorology (CASIMM). CASIMM is dedicated to developing the next generation of leaders focused on modeling the effects of climate change.</p> <p>Facility level water management processes including consideration of local NGO input is factored into facility level risk management.</p>
Other water users at a basin/catchment level		
Regulators	Relevant, always included	Regulators are an important stakeholder group to Eastman. Our policies require that we manage our water resources in compliance with all permits, laws and regulations.
River basin management authorities	Relevant, always included	We work with our river basin management authorities to help ensure adequate water, both amounts and quality, meet needs.
Statutory special interest groups at a local level		
Suppliers		
Water utilities at a local level	Relevant, always included	We work with our local water utilities to help ensure adequate water, both amounts and quality, meet needs.
Other stakeholder, please specify	Relevant, always included	<p>We work with trade organizations around the world such as ACC (American Chemistry Council), Cefic (European Chemistry Council, and AICM (Association of International Chemical Manufacturers) on health, safety, security and environmental issues including water.</p> <p>Eastman's Vice President of Global Health, Safety, & Environment participates on Tennessee Governor's TN</p>



	<p>H2O Steering Committee. TN H2O was formed to develop a plan to address population growth along with concerns over the utilization of the Memphis Sands Aquifer. The steering committee provided high-level direction for the plan development. Working Groups comprised of subject matter experts conducted the research and gathered data and information. The Tennessee Division of Environment & Conservation led plan development. TN H2O paid particular attention to surface and groundwater, water and wastewater infrastructure, water reuse and land conservation, as well as institutional and legal framework. TN H2O developed a plan and future implementation will be directed by governmental agencies.</p> <p>A legionella outbreak was identified in Ghent, Belgium where one of our sites is located. Eastman collaborated with local health and city officials to test our cooling towers and successfully eliminated them as a potential source of the outbreak. In addition, we communicated with employees and neighbors regarding the threat to public drinking water and important safeguards, and we answered questions about legionella.</p>
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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.

Water is a basic need for our manufacturing operations. Eastman performs a comprehensive, company-wide risk assessment for its operations every five years, or more often in the event of acquisitions. These assessments help the company understand where water scarcity issues exist and help to prioritize limited resources to address water quality and availability issues, if any are identified.

Eastman annually uses the WRI Aqueduct™ tool and the WBCSD Global Water Tool, as well as an in-house survey, to project water-stressed site risks out to 2025. Water risks, including quantity and quality, as well as regulatory and community restraints, are site issues that are managed as key infrastructure elements that govern viability and potential growth of every site. The decision to establish a site includes an evaluation of the water resources and annual decisions concerning the siting of new processes are largely determined on the assessment of infrastructure needs. New facility siting is governed by an Eastman policy that requires the project evaluation team to consider these criteria: historical climate data including potential impact, likelihood of occurrence and resources required for preparation for severe storms and other natural disasters; availability, capacity, and capability of waste treatment facilities; availability of fresh water via local rivers or aquifers, local streams or rivers potentially impacted as receiving streams; and existence of local/regional sensitivities and necessary means to minimize their impact.



Significant risks, including water-related risks, are evaluated in Eastman’s Enterprise Risk Management (ERM) process which is overseen by the Audit Committee of the Board of Directors. Mitigation plans are developed as needed and executed upon by the appropriate working groups.

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?

Eastman defines substantive change as one that would be ‘material’ information as defined by applicable law and thus requiring public disclosure to investors. This applies to both direct operations and to the supply chain.

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	Eastman utilizes commercially available tools (Aqueduct and WBCSD Water Tool) to identify sites in water-stressed regions. Less than 20% of Eastman sites are in water-stressed regions with a much lower percentage of actual production at water-stressed sites. Water quantity and quality are considered in siting decisions. In addition, water reuse opportunities are identified and exploited to reduce water requirements. For example, condensate return is emphasized and heat integration reuses the thermal energy of water streams. Eastman has a broad portfolio of products and this diversification mitigates the



	impact of risk to any particular product or site. This was evident in 2017 when a number of hurricanes hit the United States, but had no substantive impact on Eastman's ability to fill orders and satisfy customer needs.
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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	Water related issues have not risen to a substantive level for Eastman. Eastman has a diverse raw material and commodity supply chain which minimizes our risk when there are issues with severe weather events or other events beyond our control and our supply chain. In addition, our key suppliers are routinely risk assessed and our contracting process surfaces issues of this nature where they are dealt with contractually. Any new supplier must submit a supplier information form that is located on our public website. Data requested on this form includes whether a supplier is RC@14001 or ISO14001 certified. Both of these programs are externally audited and water management, metrics and goals are key processes that are audited.

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

Products and services

Primary water-related opportunity

Increased sales of existing products/services

Company-specific description & strategy to realize opportunity

Eastman sells bio-based polymers, cellulose esters, into membrane filtration to purify water or water-based products such as fruit juices, wine, beer, and dairy products. A portfolio of such products is being introduced. Offering a range of cellulose esters allows the user to purchase multiple products that can be blended to obtain the targeted membrane functionality. Eastman has significant technical expertise in our research and development and technical service departments to assist with product selection and development. For example, Eastman's cellulosic membrane materials are used in forward osmosis membranes, both in industrial applications and personal hydration systems.

Estimated timeframe for realization

1 to 3 years

Magnitude of potential financial impact

Low-medium

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

1,000,000

Potential financial impact figure – maximum (currency)

5,000,000

Explanation of financial impact

Several new materials are being introduced and specific sales figures are not available. The range given is an expected estimate.



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
Row 1	Company-wide	Description of business dependency on water Description of business impact on water Description of water-related performance standards for direct operations Company water targets and goals Commitments beyond regulatory compliance Commitment to water-related innovation Commitment to stakeholder awareness and education	Eastman's Environmental Stewardship Policy and Responsible Care Pledge® provides a framework for responsible environmental management and conservation across our value chain from raw materials, processing and production, and customers. Specific elements of the Policy & Pledge address business dependency on water, business impact on water, water targets & goals, water-related innovation, stakeholder awareness & education, and commitment to meeting or exceeding regulations. Eastman has developed best practices for water reuse and conservation.  1, 2



		Acknowledgement of the human right to water and sanitation Recognition of environmental linkages, for example, due to climate change	
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¹EMN Environmental Stewardship Policy.pdf

²EMN RC_Pledge.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
Director on board	At the highest level, the Audit Committee of Eastman’s Board of Directors has responsibility for Eastman’s Enterprise Risk Management (ERM) process which includes management of all risks, including water-related risks. The Audit committee is chaired by a specific Director. The Eastman Board of Directors also has a Health, Safety, Environment and Security (HSES) Committee which has broad and dedicated oversight for HSES and Sustainability matters affecting the Company. Water-related issues are a part of the Committee’s oversight responsibility. The HSES Committee of the Eastman Board is chaired by a specific Director and includes every member of the Board. The HSES Committee routinely receives updates and presentations on water-related risks and issues. The Finance Committee of Eastman’s Board of Directors reviews new capital projects and reviewing water issues as part of that process. The Finance Committee and the full Board review and address water scarcity issues that are surfaced. The Finance Committee is chaired

	by a specific Director.
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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	<ul style="list-style-type: none"> Monitoring implementation and performance Overseeing acquisitions and divestiture Overseeing major capital expenditures Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding strategy Reviewing and guiding corporate responsibility strategy Setting performance objectives 	<p>The Audit Committee of Eastman’s Board of Directors has oversight responsibility for Eastman’s Enterprise Risk Management (ERM) process which includes management of all risks, including water-related risks. A risk review is conducted with the Audit Committee at least once per year. Eastman personnel provide the Audit Committee with semi-annual reports on regulatory and legislative developments, including water-related initiatives, that have the potential to affect the Company’s operations. As part of the ERM process, appropriate mitigation plans are developed. The Audit Committee is involved in setting performance objectives.</p> <p>The Finance Committee of Eastman’s Board of Directors oversees acquisitions and divestitures and major capital expenditures. Water issues are reviewed as part of the acquisitions and capital project review process.</p> <p>The Finance Committee and the full Board review and address water scarcity issues that are surfaced.</p>

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)

Chief Sustainability Officer (CSO)

Responsibility

Both assessing and managing water-related risks and opportunities

Frequency of reporting to the board on water-related issues

Half-yearly

Please explain

Eastman's Chief Sustainability Officer reports directly to the CEO and Chairman of the Board. The CSO is responsible for regulatory compliance and driving sustainability throughout the company including the responsible use of water. Examples of reports pertaining to water given to the Eastman's Board of Directors include regulatory updates, a water resource management overview, updates on issues such as plastics in the ocean and water pollution in China, research by the Woods Hole Oceanographic Institution, Global HSES Audit Program (GHAP) updates, our Sustainability report, cooling water intake structure studies, and National Academy of Sciences studies of the health of local rivers. These reports are given on an as-needed basis, generally less than annually. Eastman's Chief Sustainability Officer is responsible for Sustainability, Global Health, Safety, Environment, and Security, Securities, Global Trade, Global Public and Community Affairs, and the Law organizations.

W-FB6.4/W-CH6.4/W-EU6.4/W-OG6.4/W-MM6.4

(W-FB6.4/W-CH6.4/W-EU6.4/W-OG6.4/W-MM6.4) Do you provide incentives to C-suite employees or board members for the management of water-related issues?

Yes



W-FB6.4a/W-CH6.4a/W-EU6.4a/W-OG6.4a/W-MM6.4a

(W-FB6.4a/W-CH6.4a/W-EU6.4a/W-OG6.4a/W-MM6.4a) What incentives are provided to C-suite employees or board members for the management of water-related issues (do not include the names of individuals)?

	Who is entitled to benefit from these incentives?	Indicator for incentivized performance	Please explain
Monetary reward	Board chair Chief Executive Officer (CEO) Other C-suite Officer Chief Manufacturing, Supply Chain, and Engineering Officer	Other, please specify Loss of primary containment	Variable pay included in individual performance commitments with actual performance assessed in determination of annual cash.
Recognition (non-monetary)			
Other non-monetary reward			

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
- Yes, funding research organizations

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?



Direct engagements with policy makers and trade associations are overseen by the Government Affairs organization and are intended to be consistent with and supportive of Eastman policies and commitments. Structure is in place through the Sustainability Council and sub-councils; the Environment, Social and Governance (ESG) Council; and groups such as the Global Advocacy Network Team to review positions and gain alignment. This structure exists in part to drive consistency across the organization. Any inconsistency that may arise from the positions or needs of a specific site, geography, business or function and the general Eastman policies and commitments is addressed through this structure. The extent and implication of any inconsistency is evaluated and corrective action can be taken to address the particular situation and need. Public Policy overviews and activities for selected areas (including environment and natural resources) are presented to the Board of Directors at least annually. Funding for research organizations with respect to water issues is managed through either Corporate Responsibility or Technology. Funded research is either in support of Corporate Responsibility pillars significant to Eastman (Education, Environment, Economic Development and Empowerment) or strategic to business opportunities. An example of research funded by Corporate Responsibility is Eastman’s support of ocean research through the Woods Hole Oceanographic Institution.

W6.6

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

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	While Eastman has not identified significant water risks with substantive impact, water issues are integrated into long-term business objectives. Eastman is advantaged in that the vast majority of Eastman sites are not in water-stressed areas which minimizes our potential risks. However, with the adoption of a zero incident mindset and the development of appropriate measures, the Business Leadership Teams (BLT) are now considering water risks. The measures include loss of primary containment which has the potential to directly impact water quality. Each BLT now includes an HSE Director as a point of contact and each BLT receives monthly status reports.
Strategy for achieving long-term objectives	Yes, water-related issues are integrated	5-10	While Eastman has not identified significant water risks with substantive impact, water issues are integrated into long-term business objectives. Eastman is advantaged in that the vast majority of Eastman sites are not in water-stressed areas which minimizes our potential risks. However, with the adoption of a zero incident mindset and the development of appropriate measures, the Business Leadership Teams (BLT) are now considering water risks. The measures include loss of primary containment which has the potential to directly impact water quality. Each BLT now includes an HSE Director as a point of contact and each BLT receives monthly status reports. This input is factored into business strategy.
Financial planning	Yes, water-related issues are integrated	5-10	While Eastman has not identified significant water risks with substantive impact, water issues are integrated into long-term business objectives. Eastman is advantaged in that the vast majority of Eastman sites are not in water-stressed areas which minimizes our potential risks. However, with the adoption of a zero incident mindset and the development of appropriate measures, the Business Leadership Teams (BLT) are now considering water risks. The measures include loss of primary containment which has the potential to directly impact water quality. Each BLT now includes an HSE Director as a point of contact and each BLT receives monthly status reports. Water issues and concerns can be factored into financial planning.

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)

-80

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

600

Water-related OPEX (+/- % change)

0

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

0

Please explain

No change in future OPEX is anticipated at this time. However, circumstances may change that impact this projection. CAPEX decreased due to 2017 as a result of the completion of 2017 water projects. Water projects completed in 2018 included fire water and fire pump installed, replacement of a water unit, and backup cooling water pumps installed. Projected increased in CAPEX for 2019 compared to 2018 is due to increased expenditures for water-related projects including providing water utilities for increased production capacity and installation of a million gallon river water tank and back-up pumps for improved fire protection.

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	No, but we anticipate doing so within the next two years	<p>Eastman’s process for identifying and assessing risks and opportunities associated with water is coordinated by a working team with guidance from the Executive Team and oversight by the Board of Directors. An ESG Council, facilitated by the Public Policy & Emerging Issues Director, along with the Sustainability Council assess emerging issues and work to identify strategies that can mitigate risks and seize opportunities across multiple functions.</p> <p>Although at the early stages of developing climate-related scenario analysis, Eastman is taking steps to proactively understand and address water issues. Eastman has developed an internal natural hazard and weather tool to assess risks. The tool has been piloted with several sites; issues/questions identified are being addressed and broader distribution and use of the tool is anticipated in the next year.</p>
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W7.4

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

Row 1

Does your company use an internal price on water?

Yes

Please explain

Project financials are based on internally developed pricing for all utilities. This pricing has been developed using a model that estimates the total cost of water, including treatment and delivery. In addition, this model estimates how every other utility impacts water use and incorporates the impact of total water cost in the internal pricing of all other utilities. This methodology ensures that project evaluations capture the total upstream impact on water use and costs.

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 Site/facility specific targets and/or goals Brand/product specific targets and/or goals	Goals are monitored at the corporate level	Qualitative goals have been established at the corporate level. For example, providing access to safely managed Water, Sanitation and Hygiene (WASH) in workplace is a corporate level goal. At the corporate level, best practices for water reuse and conservation have been developed. All sites in the US were assessed against the best practices with plans to continue to assess other manufacturing sites. Qualitative goals have been established for specific sites. For example, two sites have goals to reduce dependency on municipal water and use lower quality water when appropriate in process areas. Most manufacturing sites measure condensate return and have established targets that are monitored at the site level. Eastman has Cradle to Cradle™ certification for some of our products. We have achieved a Gold rating in Water Stewardship under the Cradle to Cradle™ certification. We undergo Cradle to Cradle™ certification to verify the sustainable attributes of these products.

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
Adherence to best practice in water management

Level

Company-wide

Motivation

Increase freshwater availability for users/natural environment within the basin

Description of goal

Identification of best practices and assessment against those. This is a companywide goal because of the world-wide importance of water. While a limited number of Eastman sites are in water constrained areas, water availability is a growing concern and should be addressed at all sites. Eastman believes that developing a list of best practices (through cooperation with the US Department of Energy and the Lawrence Berkeley National Lab) and rating sites against those will establish a baseline for responsible water management. It will also identify which sites are better performers and promote sharing across the sites. Eastman water experts distribute a questionnaire to the sites and then follow up to discuss answers provided and make adjustments for consistent application across the company.

Baseline year

2010

Start year

2014

End year

2020

Progress

Eastman has worked with the DOE and Lawrence Berkeley National Lab to better understand the energy/water nexus and best practices being employed by other industrial companies in the DOE Better Plants Challenge Program. Best practices for water conservation have been developed. A baseline of performance by many of the Eastman sites has been assessed against these best practices. A scorecard is maintained to show which sites have completed the survey and their score as assessed against the best practices. Initial efforts have focused on establishing the baseline. Progress will be tracked over time.

W9. Linkages and trade-offs

W9.1

(W9.1) Has your organization identified any linkages or tradeoffs between water and other environmental issues in its direct operations and/or other parts of its value chain?

Yes

W9.1a

(W9.1a) Describe the linkages or tradeoffs and the related management policy or action.

Linkage or tradeoff

Linkage

Type of linkage/tradeoff

Increased energy efficiency

Description of linkage/tradeoff

Within Eastman's direct operations, systems are installed to collect steam condensate and return it to the powerhouses to be used as boiler feed water. Increasing condensate return saves both energy and water and reduces the chemicals used for water treatment. Measures are in place for percent condensate returned with established goals. Benchmarking is conducted between Eastman sites and best practices are shared.

Policy or action

As employee involvement and operation can affect percent condensate returned, a "tip sheet" was distributed to Operations personnel explaining the importance and value of returned condensate and steps they can take to affect it.
Eastman has a capital budget of \$8M/year for energy efficiency projects and some of that funding is used to improve condensate return.

Linkage or tradeoff

Linkage

Type of linkage/tradeoff

Increased energy efficiency

Description of linkage/tradeoff

Within Eastman's direct operations, water is often heated during specific processes. This heated water can then be used to provide heat to another process area, thus reducing the use of steam for process heating. Operating departments are monitored on their energy efficiency and the use of heat recovery improves their energy efficiency numbers.

Policy or action

Heat integration, including water reuse is encouraged by the Worldwide Energy Team led by the Manager, Global Natural Resource Management. Eastman has a capital budget of \$8M/year for energy efficiency projects, some of which is used to improve heat recovery of hot water streams while promoting water conservation.

W10. Verification

W10.1

(W10.1) Do you verify any other water information reported in your CDP disclosure (not already covered by W5.1d)?

No, we are waiting for more mature verification standards and/or processes

W11. 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.



W11.1

(W11.1) Provide details for the person that has signed off (approved) your CDP water response.

	Job title	Corresponding job category
Row 1	Senior Vice President, Chief Legal and Sustainability Officer and Corporate Secretary	Chief Sustainability Officer (CSO)