

Module: Introduction**Page: W0. Introduction**

W0.1**Introduction****Please give a general description and introduction to your organization**

DTE Energy (NYSE: DTE) is a diversified U.S. energy company with approximately \$10.6 billion in revenues for 2016. Our largest operating subsidiaries are DTE Electric, an electric utility, and DTE Gas, a natural gas utility.

DTE Electric is a Michigan corporation organized in 1903 and is a wholly-owned subsidiary of DTE Energy. DTE Electric is a public utility engaged in the generation, purchase, distribution, and sale of electricity to approximately 2.2 million customers in southeastern Michigan.

DTE Gas is a Michigan corporation organized in 1898 and is a wholly-owned subsidiary of DTE Energy. DTE Gas is a public utility engaged in the purchase, storage, transportation, distribution, and sale of natural gas to approximately 1.3 million customers throughout Michigan and the sale of storage and transportation capacity.

DTE Energy's other businesses are involved in 1) natural gas pipelines, gathering and storage; 2) power and industrial projects; and 3) energy marketing and trading operations.

DTE Electric and DTE Gas are regulated by the Michigan Public Service Commissions (MPSC). Certain activities of DTE Electric and DTE Gas, as well as various other aspects of businesses under DTE Energy are regulated by the Federal Energy Regulatory Commission (FERC). In addition, the Registrants are regulated by other federal and state agencies including the U.S. Nuclear Regulatory Commission (NRC), the U.S. Environmental Protection Agency (EPA), the Michigan Department of Environmental Quality (MDEQ), and for DTE Energy, the U.S. Commodities Futures Trading Commission (CFTC).

More information on DTE Energy, including our Corporate Citizen Report, can be found at:
<https://www.newlook.dteenergy.com/wps/wcm/connect/dte-web/dte-pages/ccr/home/home>

W0.2

Reporting year

Please state the start and end date of the year for which you are reporting data

Period for which data is reported
Fri 01 Jan 2016 - Sat 31 Dec 2016

W0.3

Reporting boundary

Please indicate the category that describes the reporting boundary for companies, entities, or groups for which water-related impacts are reported

Companies, entities or groups over which financial control is exercised

W0.4

Exclusions

Are there any geographies, facilities or types of water inputs/outputs within this boundary which are not included in your disclosure?

Yes

W0.4a

Exclusions

Please report the exclusions in the following table

Exclusion	Please explain why you have made the exclusion
Electric Distribution Operations	DTE Energy is focusing on the company's largest sources of water withdrawal and use; namely, our steam electric power generating stations. These generating stations operate under the authority of National Pollutant Discharge Elimination System (NPDES) permits, and local sanitary sewer permits, where applicable to industrial wastewater. The company does not track all types of water inputs and outputs for its electric distribution centers. In addition, the company does not report water discharged from its electrical manholes and vaults. The water use at these types of facilities is significantly less than that of the steam electric power generating stations.
Gas Distribution, Transmission and Storage Operations	DTE Energy is focusing on the company's largest sources of water withdrawal and use; namely, our steam electric power generating stations. These generating stations operate under the authority of NPDES permits, and local sanitary sewer permits, where applicable to industrial wastewater. The company does not track all types of water inputs and outputs for its gas distribution, transmission and storage operations. The water use at these types of facilities is significantly less than that of the steam electric power generating stations. The one exception to this exclusion is in regards to our Taggart Compressor Station. This facility holds a NPDES Permit and therefore is included in the disclosure.
Service Centers, Call Centers and Office Buildings	DTE Energy is focusing on the company's largest sources of water withdrawal and use; namely, our steam electric power generating stations. These generating stations operate under the authority of NPDES permits, and local sanitary sewer permits, where applicable to industrial wastewater. The company does not track all types of water inputs and outputs for its service centers, call centers and office buildings. The water use at these types of facilities is significantly less than that of the steam electric power generating stations. In general, the source of water at these facilities is purchased from local municipalities. The one exception to this exclusion is the water use information at the corporate headquarters in Detroit, MI.
Non Utility Operations	DTE Energy is focusing on the company's largest sources of water withdrawal and use; namely, our steam electric power generating stations. These generating stations operate under the authority of NPDES permits, and local sanitary sewer permits, where applicable to industrial wastewater. The company does not track all types of water inputs and outputs for its non utility operations such as power & industrial projects and energy trading services.
Utility Operations	DTE Energy is minority owner of a pumped storage facility in Michigan; this plant generates electricity and is regulated. Operations and water reporting for this facility is performed by the majority owner, therefore it is excluded from this questionnaire.

Further Information

Module: Current State

Page: W1. Context

W1.1

Please rate the importance (current and future) of water quality and water quantity to the success of your organization

Water quality and quantity	Direct use importance rating	Indirect use importance rating	Please explain
Sufficient amounts of good quality freshwater available for use	Vital for operations	Important	Direct: Sufficient amounts of good quality freshwater are absolutely vital for non-contact cooling at our steam electric generating plants. We could not supply electricity, an essential product for customers, without this resource. Indirect: Sufficient amounts of good quality freshwater are required at facilities throughout the DTE Energy organization. Municipal water supply for employee use is necessary to support all of our operations.
Sufficient amounts of recycled, brackish and/or produced water available for use	Vital for operations	Neutral	Direct: Sufficient amounts of recycled water are required for non-contact cooling at two of our steam electric generating plants (Fermi 2 and Greenwood). These two plants represent approximately 18% of DTE Electric's generating capability. Indirect: Although the indirect use of recycled, brackish and/or produced water has not been formally evaluated, it is estimated that this water input is not a significant part of the value chain for DTE.

W1.2

For your total operations, please detail which of the following water aspects are regularly measured and monitored and provide an explanation as to why or why not

Water aspect	% of sites/facilities/operations	Please explain
Water withdrawals- total volumes	76-100	The vast majority of withdrawals are in the form of noncontact cooling water for our electric generating facilities. These fresh water withdrawals are measured and monitored for the purpose of monthly NPDES reporting, as well as annual water use reporting for the state of Michigan. These reports are required by federal and state regulations.
Water withdrawals- volume by sources	76-100	The vast majority of withdrawals are in the form of noncontact cooling water for our electric generating facilities. These fresh water withdrawals are measured and monitored for the purpose of monthly NPDES reporting, as well as annual water use reporting for the state of Michigan. These reports are required by federal and state regulations. Other surface water withdrawals are made for dust control

Water aspect	% of sites/facilities/operations	Please explain
		purposes, primarily at electric generation and coal processing facilities. These withdrawals are typically not measured or monitored. Other withdrawals are from ground water, rainwater and municipal water supplies; these withdrawals may not be measured, and account for <1% of the total.
Water discharges- total volumes	76-100	The vast majority of discharges are in the form of noncontact cooling water from our electric generating facilities. These discharges are measured and monitored for the purpose of monthly NPDES reporting, as well as annual water use reporting for the state of Michigan. These reports are required by federal and state regulations.
Water discharges- volume by destination	76-100	The vast majority of discharges are in the form of noncontact cooling water from our electric generating facilities to surface waters. These discharges are returned to surface waters, and are measured and monitored for the purpose of monthly NPDES reporting, as well as annual water use reporting for the state of Michigan. These reports are required by federal and state regulations. Other discharges are to ground water and municipal water treatment plants; these discharges may not be measured, and account for <1% of the total.
Water discharges- volume by treatment method		On Site Treatment: The vast majority of discharges are associated with our electric generating facilities, and are treated on site with various methods (e.g. chemical clarification, plain clarification, oil/water separation). These discharges are returned to surface waters, and are measured and monitored for the purpose of monthly NPDES reporting, as well as annual water use reporting for the state of Michigan. These reports are required by federal and state regulations. Off Site Treatment: The remaining discharges are largely associated with the potable water needs of our facilities, and are treated off site via municipal treatment plants or private treatment storage & disposal facilities (TSDF). These discharges are returned to surface waters in most cases, and are measured/monitored by the off site facility.
Water discharge quality data- quality by standard effluent parameters	76-100	On Site Treatment: Water quality standards for the vast majority of discharges are provided in the NPDES permits associated with our electric generating facilities. The NPDES program is administered by the State of Michigan where the majority of discharges take place. Off Site Treatment: Water quality standards for the remaining discharges are governed by the permits associated with the municipal treatment plants or private TSDFs. These facilities have NPDES permits of their own in most cases.
Water consumption- total volume	76-100	The vast majority of consumption is calculated for our electric generating facilities and reported annually to the State of Michigan. Consumption for these operations are neither measured nor monitored directly. However, measured and monitored data is used in the formulas for calculating water consumption, which is accepted industry practice. The balance of consumption is associated with other operations such as potable water needs, groundwater withdrawal/discharges, and dust control.
Facilities providing fully-functioning WASH services for all workers	76-100	Fully functioning Water Supply, Adequate Sanitation and Hygiene (WASH) is provided for all workers throughout the organization. Our operations are located in well-developed areas with modern facilities where WASH is readily available. WASH services are widely measured and monitored for billing purposes, which are mainly provided by local municipalities.

W1.2a

Water withdrawals: for the reporting year, please provide total water withdrawal data by source, across your operations

Source	Quantity (megaliters/year)	How does total water withdrawals for this source compare to the last reporting year?	Comment
Fresh surface water	4086533	Lower	The amount of withdrawal in 2016 was approximately 12% lower than in 2015.
Brackish surface water/seawater	0	Not applicable	Brackish surface water/seawater is not withdrawn as part of our operations.
Rainwater	0	Not applicable	Rainwater as a source of withdrawal is not accounted for as part of our operations.
Groundwater - renewable	1992	About the same	One facility (Sibley Quarry) withdraws groundwater that is formally accounted for and reported. Groundwater removed for other purposes (e.g. dewatering for pipeline projects) is typically not measured or reported.
Groundwater - non-renewable	0	Not applicable	Groundwater – non-renewable as a source of withdrawal is not accounted for as part of our operations.
Produced/process water	0	Not applicable	Produced/process as a source of withdrawal is not accounted for as part of our operations.
Municipal supply	221	Much higher	Two facilities are accounted for withdrawals from municipal supply: Greenwood Energy Center (Facility 4) and the Company Headquarters (Facility 13, which is new for 2017). The addition of Facility 13 greatly increases the amount of municipal supply withdrawal reported in 2016 when compared with 2015.
Wastewater from another organization	0	Not applicable	
Total	4088746	Lower	The vast majority of the total withdrawal is fresh surface water. As stated above, the amount of withdrawal in 2016 was approximately 12% lower than in 2015.

W1.2b

Water discharges: for the reporting year, please provide total water discharge data by destination, across your operations

Destination	Quantity (megaliters/year)	How does total water discharged to this destination compare to the last reporting year?	Comment
Fresh surface water	4017721	Lower	The amount of discharge in 2016 was approximately 12% lower than in 2015.
Brackish surface water/seawater	0	Not applicable	Discharge to brackish surface water/seawater is not part of our operations.
Groundwater	0	Not applicable	Discharge to groundwater is not accounted for as part of our operations.
Municipal/industrial wastewater treatment plant	231	Much higher	Two facilities are accounted for discharge to municipal/industrial wastewater treatment plants: Fermi 2 Power Plant (Facility 3) and the Company Headquarters (Facility 13, which is new for 2017). The addition of Facility 13 greatly increases the amount of discharge reported in 2016 when compared with 2015.
Wastewater for another organization	0	Not applicable	Discharge for another organization is not part of our operations.
Total	4017952	Lower	The vast majority of the total discharges is to fresh surface water. As stated above, the amount of discharge in 2016 was approximately 12% lower than in 2015.

W1.2c

Water consumption: for the reporting year, please provide total water consumption data, across your operations

Consumption (megaliters/year)	How does this consumption figure compare to the last reporting year?	Comment
72161		The amount of consumption in 2016 was approximately 5% lower when compared with 2015.

W1.3

Do you request your suppliers to report on their water use, risks and/or management?

Yes

W1.3a

Please provide the proportion of suppliers you request to report on their water use, risks and/or management and the proportion of your procurement spend this represents

Proportion of suppliers %	Total procurement spend %	Rationale for this coverage
1-25	76-100	The proportion of suppliers that receive surveys corresponds to approximately 80% of total procurement spend.

W1.3b

Please choose the option that best explains why you do not request your suppliers to report on their water use, risks and/or management

Primary reason	Please explain
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W1.4

Has your organization experienced any detrimental impacts related to water in the reporting year?

Yes

W1.4a

Please describe the detrimental impacts experienced by your organization related to water in the reporting year

Country	River basin	Impact driver	Impact	Description of impact	Length of impact	Overall financial impact	Response strategy	Description of response strategy
United States of America	St. Lawrence	Reg-Mandatory water efficiency, conservation, recycling or process standards Reg-Regulation of discharge quality/volumes leading to higher compliance costs Reg-Regulatory uncertainty	Closure of operations	Revised Effluent Limitation Guidelines (ELGs) for steam electric plants were finalized on 9/30/2015. New limits will impose a significant financial burden to the company, and will likely be contributing factors to several plant closures. One of the most significant changes is the requirement to cease discharge of bottom ash transport water (BATW). Closing plants will require the company to build or purchase replacement power. The revised ELGs will also impact plants that will continue to operate beyond the latest compliance date. The impact will be in the form of both capital and operation/maintenance costs. Recent development: The revised ELGs were stayed by the EPA on 4/24/2017 until	Compliance with ELG requirements begins as early as 11/1/2018, but no later than 12/31/2023. However, the costs for compliance began last year and continued into this year. Recent development: With the stay in place as previously described, the length of impact is uncertain.	Unknown	Engagement with community Engagement with customers Engagement with public policy makers Engagement with other stakeholders in the river basin Engagement with suppliers Infrastructure investment Increased capital expenditure Increased investment in new	The Company implemented a capital project to improve the infrastructure in a manner to reduce the risk of flooding at one of our electric generating stations during heavy rainfall events.

Country	River basin	Impact driver	Impact	Description of impact	Length of impact	Overall financial impact	Response strategy	Description of response strategy
				8/12/2017. The stay provides a period whereby the EPA plans to reconsider the rule for revision. This development lends uncertainty to the company's strategy for complying with the rule.			technology Promote best practice and awareness Strengthen links with local community	

W1.4b

Please choose the option below that best explains why you do not know if your organization experienced any detrimental impacts related to water in the reporting year and any plans you have to investigate this in the future

Primary reason	Future plans
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Further Information

Module: Risk Assessment

Page: W2. Procedures and Requirements

W2.1

Does your organization undertake a water-related risk assessment?

Water risks are assessed

W2.2

Please select the options that best describe your procedures with regard to assessing water risks

Risk assessment procedure	Coverage	Scale	Please explain
Water risk assessment undertaken independently of other risk assessments	Direct operations	Some facilities	Water risks are currently evaluated on a case-by-case basis at individual facilities.

W2.3

Please state how frequently you undertake water risk assessments, at what geographical scale and how far into the future you consider risks for each assessment

Frequency	Geographic scale	How far into the future are risks considered?	Comment
Sporadically not defined	Facility	1 to 3 years	Water risks are currently evaluated on a case-by-case basis at individual facilities.

W2.4

Have you evaluated how water risks could affect the success (viability, constraints) of your organization's growth strategy?

Yes, evaluated over the next 1 year

W2.4a

Please explain how your organization evaluated the effects of water risks on the success (viability, constraints) of your organization's growth strategy?

The effects of water risks are evaluated on a case-by-case basis pertaining to our organization's growth strategy. For example, the Company modified the cooling pond for one of our electric generating stations in an effort to balance electrical derates due to insufficient condenser cooling capability. The potential sources of water to fill the modification were evaluated for a variety of risk factors (e.g. cost, availability, reputational impact). The chosen source of water turned out to be successful in terms of mitigating the risk factors.

W2.4b

What is the main reason for not having evaluated how water risks could affect the success (viability, constraints) of your organization's growth strategy, and are there any plans in place to do so in the future?

Main reason	Current plans	Timeframe until evaluation	Comment
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W2.5

Please state the methods used to assess water risks

Method	Please explain how these methods are used in your risk assessment
Internal company knowledge Regional government databases	Internal company knowledge is used on a case-by-case basis, and regional government databases are available as needed.

W2.6

Which of the following contextual issues are always factored into your organization's water risk assessments?

Issues	Choose option	Please explain
Current water availability and quality parameters at a local level	Relevant, included	These issues are relevant and included as situations arise.
Current water regulatory frameworks and tariffs at a local level	Relevant, included	These issues are relevant and included as situations arise.
Current stakeholder conflicts concerning water resources at a local level	Relevant, included	These issues are relevant and included as situations arise.
Current implications of water on your key commodities/raw materials	Relevant, included	These issues are relevant and included as situations arise.
Current status of ecosystems and habitats at a local level	Relevant, included	These issues are relevant and included as situations arise.
Current river basin management plans	Relevant, included	These issues are relevant and included as situations arise.
Current access to fully-functioning WASH services for all employees	Relevant, included	These issues are relevant and included as situations arise.
Estimates of future changes in water availability at a local level	Relevant, not yet included	These issues have not been evaluated, but it is anticipated that they will be in the future.

Issues	Choose option	Please explain
Estimates of future potential regulatory changes at a local level	Relevant, included	These issues are relevant and included as situations arise.
Estimates of future potential stakeholder conflicts at a local level	Relevant, included	These issues are relevant and included as situations arise.
Estimates of future implications of water on your key commodities/raw materials	Relevant, included	These issues are relevant and included as situations arise.
Estimates of future potential changes in the status of ecosystems and habitats at a local level	Relevant, included	These issues are relevant and included as situations arise.
Scenario analysis of availability of sufficient quantity and quality of water relevant for your operations at a local level	Relevant, included	These issues are relevant and included as situations arise.
Scenario analysis of regulatory and/or tariff changes at a local level	Relevant, included	These issues are relevant and included as situations arise.
Scenario analysis of stakeholder conflicts concerning water resources at a local level	Relevant, included	These issues are relevant and included as situations arise.
Scenario analysis of implications of water on your key commodities/raw materials	Relevant, not yet included	These issues have not been evaluated, but it is anticipated that they will be in the future.
Scenario analysis of potential changes in the status of ecosystems and habitats at a local level	Relevant, included	These issues are relevant and included as situations arise.
Other		

W2.7

Which of the following stakeholders are always factored into your organization's water risk assessments?

Stakeholder	Choose option	Please explain
Customers	Relevant, included	These stakeholders are relevant and included as situations arise.
Employees	Relevant, included	These stakeholders are relevant and included as situations arise.

Stakeholder	Choose option	Please explain
Investors	Relevant, included	These stakeholders are relevant and included as situations arise.
Local communities	Relevant, included	These stakeholders are relevant and included as situations arise.
NGOs	Relevant, included	These stakeholders are relevant and included as situations arise.
Other water users at a local level	Relevant, included	These stakeholders are relevant and included as situations arise.
Regulators	Relevant, included	These stakeholders are relevant and included as situations arise.
River basin management authorities	Relevant, included	These stakeholders are relevant and included as situations arise.
Statutory special interest groups at a local level	Relevant, included	These stakeholders are relevant and included as situations arise.
Suppliers	Relevant, included	These stakeholders are relevant and included as situations arise.
Water utilities at a local level	Relevant, included	These stakeholders are relevant and included as situations arise.
Other		

W2.8

Please choose the option that best explains why your organisation does not undertake a water-related risk assessment

Primary reason	Please explain

Further Information

Module: Implications

Page: W3. Water Risks

W3.1

Is your organization exposed to water risks, either current and/or future, that could generate a substantive change in your business, operations, revenue or expenditure?

Yes, direct operations and supply chain

W3.2

Please provide details as to how your organization defines substantive change in your business, operations, revenue or expenditure from water risk

The majority of our operations and supply chain takes place in Michigan, which has an abundant fresh water supply. Although the risks to our company are low at this time, the risks are expected to increase in the future (e.g. as regulations continue to change and challenge our industry). An example of a substantive change would be legislation or a physical change in supply that would reduce our ability to withdraw the amount of water needed to produce adequate amount of electricity for our customers.

W3.2a

Please provide the number of facilities* per river basin exposed to water risks that could generate a substantive change in your business, operations, revenue or expenditure; and the proportion of company-wide facilities this represents

Country	River basin	Number of facilities exposed to water risk	Proportion of company-wide facilities that this represents (%)	Comment
United States of America	St. Lawrence	8	91-100	There are seven electric generating stations and one natural gas compressor station that withdraw fresh water from the Michigan Great Lakes, which are located in the St. Lawrence watershed. A significant change in the water level within the watershed could put these facilities at risk of damage or losing production.

W3.2b

For each river basin mentioned in W3.2a, please provide the proportion of the company's total financial value that could be affected by water risks

Country	River basin	Financial reporting metric	Proportion of chosen metric that could be affected	Comment
United States of America	St. Lawrence	% generation capacity	91-100	The amount of generation or production capacity lost by a significant change in the water level within the watershed could range from 0% to 100% depending on the nature of the event or situation. For example, a significant drop in water level could result in the loss of cooling water, and therefore generation or production, at one or more of the facilities.

W3.2c

Please list the inherent water risks that could generate a substantive change in your business, operations, revenue or expenditure, the potential impact to your direct operations and the strategies to mitigate them

Country	River basin	Risk driver	Potential impact	Description of potential impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
United States of America	St. Lawrence	Physical-Climate change Physical-Inadequate infrastructure	Other: Higher operating and capital costs	Changing water levels could require restructuring of cooling water intake structures (CWIS) and plant discharge structures	>6 years	Unlikely	Unknown	Engagement with public policy makers Increased capital expenditure	Unknown	The company would perform a cost/benefit analysis to provide the information needed to make a decision.
United States of America	St. Lawrence	Regulatory-Regulation of discharge quality/volumes leading to higher compliance costs	Other: Higher operating and capital costs	Water Act regulations related to 316(b) for cooling water intake structures, and effluent limitation guidelines (ELG) for wastewater discharges, will require substantive physical and operational changes at our steam electric generating stations. In addition, the revised coal combustion residuals (CCR) rule requires extensive changes to wastewater systems at some	Current-up to 1 year	Highly probable	High	Engagement with public policy makers Engagement with suppliers Increased capital expenditure Increased investment in new technology Other: Implement regulatory requirements	Unknown	The company has evaluated the impact of the CCR rules and is in the process of coming into compliance. Strategies to address the revised 316(b) rules and the revised ELGs are underway. It should be noted that the USEPA is reconsidering the ELG rule for potential changes, and the CCR rule may follow this same path.

Country	River basin	Risk driver	Potential impact	Description of potential impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
				of our facilities.						
United States of America	St. Lawrence	Regulatory-Mandatory water efficiency, conservation, recycling or process standards	Higher operating costs	The company may have to change its operations (e.g. reduce output) in order to meet mandatory requirements.	Unknown	Unknown	Unknown	Other: Implement regulatory requirements	Unknown	The company would endeavor to negotiate favorable limits, but would ultimately comply with the regulatory requirements.
United States of America	St. Lawrence	Regulatory-Statutory water withdrawal limits/changes to water allocation	Higher operating costs	The company may have to change its operations (e.g. reduce output) in order to meet revised limits to water withdrawal.	Unknown	Unknown	Unknown	Other: Implement regulatory requirements	Unknown	The company would endeavor to negotiate favorable limits/allocation, but would ultimately comply with the regulatory requirements.

W3.2d

Please list the inherent water risks that could generate a substantive change in your business operations, revenue or expenditure, the potential impact to your supply chain and the strategies to mitigate them

Country	River basin	Risk driver	Potential impact	Description of potential impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
United States of America	St. Lawrence	Regulatory-Regulation of discharge quality/volumes leading to higher compliance costs	Supply chain disruption	The number of credible suppliers to address the revised ELGs related to flue gas desulphurization (FGD) wastewater treatment may be limited due to the high demand nationwide to meet the low discharge criteria that is being required by the federal government. This impact may put our company in jeopardy of meeting the revised limits. It should be noted that the USEPA is currently reconsidering the ELG rule for revision.	1-3 years	Probable	High	Engagement with public policy makers Engagement with suppliers Increased capital expenditure Increased investment in new technology Supplier diversification Other: Engagement with advocacy groups.	Unknown	Specific to FGD wastewater treatment: The company is working with industry research and advocacy groups to devise a strategy for meeting the new ELG limits on selenium, arsenic, mercury and nitrate/nitrite. At present, the best available technology (BAT) being proposed does not appear to meet the anticipated limits. Other technologies are being investigated, and in some cases, pilot tested. It should be noted that the USEPA is currently

Country	River basin	Risk driver	Potential impact	Description of potential impact	Timeframe	Likelihood	Magnitude of potential financial impact	Response strategy	Costs of response strategy	Details of strategy and costs
										reconsidering the ELG rule for revision. Changes to the rule would likely result in a change to our strategy.

W3.2e

Please choose the option that best explains why you do not consider your organization to be exposed to water risks in your direct operations that could generate a substantive change in your business, operations, revenue or expenditure

Primary reason	Please explain
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W3.2f

Please choose the option that best explains why you do not consider your organization to be exposed to water risks in your supply chain that could generate a substantive change in your business, operations, revenue or expenditure

Primary reason	Please explain
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W3.2g

Please choose the option that best explains why you do not know if your organization is exposed to water risks that could generate a substantive change in your business operations, revenue or expenditure and discuss any future plans you have to assess this

Primary reason	Future plans
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Further Information

Page: W4. Water Opportunities

W4.1

Does water present strategic, operational or market opportunities that substantively benefit/have the potential to benefit your organization?

Yes

W4.1a

Please describe the opportunities water presents to your organization and your strategies to realize them

Country or region	Opportunity	Strategy to realize opportunity	Estimated timeframe	Comment
United States of America	Increased brand value Other: Shipping on the Great Lakes	The company owns and operates a coal management facility located on Lake Superior known as Midwest Energy Resources Company (MERC). MERC is marketed as a resource for the Company and external clients.	Unknown	MERC services the Company and other clients with coal supply needs. The Great Lakes provides a means of shipping coal to Company-owned power plants and other clients; this provides both cost savings and sales opportunities.

W4.1b

Please choose the option that best explains why water does not present your organization with any opportunities that have the potential to provide substantive benefit

Primary reason	Please explain
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W4.1c

Please choose the option that best explains why you do not know if water presents your organization with any opportunities that have the potential to provide substantive benefit

Primary reason	Please explain
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Further Information

Module: Accounting

Page: W5. Facility Level Water Accounting (I)

W5.1

Water withdrawals: for the reporting year, please complete the table below with water accounting data for all facilities included in your answer to W3.2a

Facility reference number	Country	River basin	Facility name	Total water withdrawals (megaliters/year) at this facility	How does the total water withdrawals at this facility compare to the last reporting year?	Please explain
Facility 1	United States of America	St. Lawrence	Belle River Power Plant	665859	Higher	About 14% higher in 2016 when compared with 2015.
Facility 2	United States of America	St. Lawrence	Connors Creek Power Plant	0	About the same	No change. This facility no longer generates electric power and is in the process of being decommissioned.
Facility 3	United States of America	St. Lawrence	Fermi 2 Power Plant	68086	About the same	No change, <1% change when compared with 2015.
Facility 4	United States of America	St. Lawrence	Greenwood Energy Center	17	Much higher	About 750% higher in 2016 when compared with 2015. It should be noted that this facility operates a closed loop cooling water system and uses both municipal water supply and local surface water for make up. The reported amount is from the municipal supply only; surface water withdrawal is not estimated or measured. Although the increase is much higher, the actual amount of water withdrawal is low when compared with our other facilities.

Facility reference number	Country	River basin	Facility name	Total water withdrawals (megaliters/year) at this facility	How does the total water withdrawals at this facility compare to the last reporting year?	Please explain
Facility 5	United States of America	St. Lawrence	Harbor Beach Power Plant	0	About the same	No change. This facility no longer generates electric power and is in the process of being decommissioned.
Facility 7	United States of America	St. Lawrence	Monroe Power Plant	1896618	Higher	About 10% higher in 2016 when compared with 2015.
Facility 8	United States of America	St. Lawrence	River Rouge Power Plant	193620	Much lower	About 44% lower in 2016 when compared with 2015. It should be noted that one of the two operating units at this facility was permanently shut down in 2016.
Facility 9	United States of America	St. Lawrence	St. Clair Power Plant	926609	Lower	About 17% lower in 2016 when compared with 2015 primarily due to a fire that occurred at the facility in August 2016, which caused unanticipated shutdowns of generating units.
Facility 10	United States of America	St. Lawrence	Sibley Quarry	1992	About the same	No change, <1% change when compared with 2015.
Facility 11	United States of America	St. Lawrence	Taggart Compressor Station	17642	Lower	About 5% lower in 2016 when compared with 2015.
Facility 12	United States of America	St. Lawrence	Trenton Channel Power Plant	318099	Much lower	About 24% lower in 2016 when compared with 2015. It should be noted that one of the two operating units at this facility was permanently shut down in 2016.
Facility 13	United States of America	St. Lawrence	Company Headquarters	204	This is our first year of measurement	This is the first year reporting for this facility, which is headquarters for the company. The total amount of withdrawal is based on invoices received from the municipal water supplier.

Further Information

Page: W5. Facility Level Water Accounting (II)

W5.1a

Water withdrawals: for the reporting year, please provide withdrawal data, in megaliters per year, for the water sources used for all facilities reported in W5.1

Facility reference number	Fresh surface water	Brackish surface water/seawater	Rainwater	Groundwater (renewable)	Groundwater (non-renewable)	Produced/process water	Municipal water	Wastewater from another organization	Comment
Facility 1	665859	0	0	0	0	0	0	0	This facility withdraws municipal water primarily for sanitary use, but the volume has not been reported.
Facility 2	0	0	0	0	0	0	0	0	This facility withdraws municipal water primarily for sanitary use, but the volume has not been reported.
Facility 3	68086	0	0	0	0	0	0	0	This facility withdraws municipal water primarily for sanitary use, but the volume has not been reported.
Facility 4	0	0	0	0	0	0	17	0	This facility withdraws municipal water and fresh surface water for both cooling water make up and for sanitary use. The number reported only

Facility reference number	Fresh surface water	Brackish surface water/seawater	Rainwater	Groundwater (renewable)	Groundwater (non-renewable)	Produced/process water	Municipal water	Wastewater from another organization	Comment
									represents the amount of municipal supply that is used for cooling water purposes.
Facility 5	0	0	0	0	0	0	0	0	This facility withdraws municipal water primarily for sanitary use, but the volume has not been reported.
Facility 7	1896618	0	0	0	0	0	0	0	This facility withdraws municipal water primarily for sanitary use, but the volume has not been reported.
Facility 8	193620	0	0	0	0	0	0	0	This facility withdraws municipal water primarily for sanitary use, but the volume has not been reported.
Facility 9	926609	0	0	0	0	0	0	0	This facility withdraws municipal water primarily for sanitary use, but the volume has not been reported.
Facility 10	0	0	0	1992	0	0	0	0	This facility withdraws municipal water primarily for sanitary use, but the volume has not been reported.

Facility reference number	Fresh surface water	Brackish surface water/seawater	Rainwater	Groundwater (renewable)	Groundwater (non-renewable)	Produced/process water	Municipal water	Wastewater from another organization	Comment
Facility 11	17642	0	0	0	0	0	0	0	This facility withdraws municipal water primarily for sanitary use, but the volume has not been reported.
Facility 12	318099	0	0	0	0	0	0	0	This facility withdraws municipal water primarily for sanitary use, but the volume has not been reported.
Facility 13	0	0	0	0	0	0	204	0	This is the first year reporting for this facility, which is headquarters for the company. The total amount of withdrawal is based on invoices received from the municipal water supplier.

W5.2

Water discharge: for the reporting year, please complete the table below with water accounting data for all facilities included in your answer to W3.2a

Facility reference number	Total water discharged (megaliters/year) at this facility	How does the total water discharged at this facility compare to the last reporting year?	Please explain
Facility 1	658158	Higher	Approximately 15% higher in 2016 compared to 2015 due to the need to discharge additional wastewater.
Facility 2	19	Much higher	Approximately 170% higher in 2016 compared to 2015 due to the need to discharge additional wastewater.
Facility 3	42021	Lower	Approximately 6% lower in 2016 compared to 2015 due to the reduced need to discharge wastewater.
Facility 4	256	Higher	Approximately 17% higher in 2016 compared to 2015 due to the need to discharge additional wastewater.
Facility 5	70	Higher	Approximately 37% higher in 2016 compared to 2015 due to the need to discharge additional wastewater.
Facility 7	1867298	Much lower	Approximately 10% lower in 2016 compared to 2015 due to the reduced need to discharge wastewater.
Facility 8	192404	Much lower	Approximately 44% lower in 2016 compared to 2015 due to the reduced need to discharge wastewater. As noted in Section 5.1, one of the two units at this facility was permanently shut down in 2016.
Facility 9	922037	Lower	Approximately 16% lower in 2016 compared to 2015 due to the reduced need to discharge wastewater.
Facility 10	1992	About the same	Less than 1% difference when comparing 2016 to 2015.
Facility 11	17614	Lower	Approximately 5% lower in 2016 compared to 2015 due to the reduced need to discharge wastewater.
Facility 12	315879	Lower	Approximately 24% lower in 2016 compared to 2015 due to the reduced need to discharge wastewater. As noted in Section 5.1, one of the two units at this facility was permanently shut down in 2016.
Facility 13	204	This is our first year of measurement	This is the first year for reporting at this facility, which is the headquarters for the company. The municipal water supplier does not provide a discrete amount of water discharged, therefore the amount of water discharged is equivalent to the amount of water withdrawn.

W5.2a

Water discharge: for the reporting year, please provide water discharge data, in megaliters per year, by destination for all facilities reported in W5.2

Facility reference number	Fresh surface water	Municipal/industrial wastewater treatment plant	Seawater	Groundwater	Wastewater for another organization	Comment
Facility 1	658158	0	0	0	0	This facility discharges water to a Municipal Treatment Plant primarily for sanitary use, but the volume has not been reported.
Facility 2	19	0	0	0	0	This facility discharges water to a Municipal Treatment Plant primarily for sanitary use, but the volume has not been reported.
Facility 3	41994	27	0	0	0	This facility discharges a portion of both process wastewater and sanitary water to a municipal/industrial wastewater treatment plant; however, only the amount of process wastewater is reported.
Facility 4	256	0	0	0	0	This facility discharges treated process and sanitary water to fresh surface water.
Facility 5	70	0	0	0	0	This facility discharges water to a Municipal Treatment Plant primarily for sanitary use, but the volume has not been reported.
Facility 7	1867298	0	0	0	0	This facility discharges water to a Municipal Treatment Plant primarily for sanitary use, but the volume has not been reported.
Facility 8	192404	0	0	0	0	This facility discharges water to a Municipal Treatment Plant primarily for sanitary use, but the volume has not been reported.
Facility 9	922037	0	0	0	0	This facility discharges water to a Municipal Treatment Plant primarily for sanitary use, but the volume has not been reported.
Facility 10	1992	0	0	0	0	This facility discharges water to a Municipal Treatment Plant primarily for sanitary use, but the volume has not been reported.
Facility 11	17614	0	0	0	0	This facility discharges water to a Municipal Treatment Plant primarily for sanitary use, but the volume has not been reported.
Facility 12	315879	0	0	0	0	This facility discharges water to a Municipal Treatment Plant primarily for sanitary use, but the volume has not been

Facility reference number	Fresh surface water	Municipal/industrial wastewater treatment plant	Seawater	Groundwater	Wastewater for another organization	Comment
						reported.
Facility 13	0	204	0	0	0	This is the first year for reporting at this facility, which is the headquarters for the company. The municipal water supplier does not provide a discrete amount of water discharged, therefore the amount of water discharged is equivalent to the amount of water withdrawn.

W5.3

Water consumption: for the reporting year, please provide water consumption data for all facilities reported in W3.2a

Facility reference number	Consumption (megaliters/year)	How does this compare to the last reporting year?	Please explain
Facility 1	7828	Higher	Approximately 4% higher in 2016 compared with 2015.
Facility 2	0	About the same	No change.
Facility 3	26092	Higher	Approximately 12% higher in 2016 compared with 2015.
Facility 4	632	Much higher	Approximately 114% higher in 2016 compared with 2015. This facility operates with a closed cycle cooling system; consumption is dependent primarily on run time, which was much higher in 2016 compared with 2015.
Facility 5	0	About the same	No change.
Facility 7	29241	Lower	Approximately 10% lower in 2016 compared with 2015.
Facility 8	1301	Much lower	Approximately 41% lower in 2016 compared with 2015. As noted in Section 5.1, one of the two units at this facility was permanently shut down in 2016.
Facility 9	4563	Much lower	Approximately 34% lower in 2016 compared with 2015. This lower value is consistent with the 32% reduced electric generation at the plant in 2016 when compared with 2015.
Facility 10	0	About the same	No change.

Facility reference number	Consumption (megaliters/year)	How does this compare to the last reporting year?	Please explain
Facility 11	31	Higher	Approximately 19% higher in 2016 compared with 2015.
Facility 12	2474	Lower	Approximately 21% lower in 2016 compared with 2015.
Facility 13	0	This is our first year of measurement	This is the first year for reporting at this facility, which is the headquarters for the company. The amount of water consumed has not been measured nor calculated for this facility.

W5.4

For all facilities reported in W3.2a what proportion of their water accounting data has been externally verified?

Water aspect	% verification	What standard and methodology was used?
Water withdrawals- total volumes	Not verified	None.
Water withdrawals- volume by sources	Not verified	None.
Water discharges- total volumes	Not verified	None.
Water discharges- volume by destination	Not verified	None.
Water discharges- volume by treatment method	Not verified	None.
Water discharge quality data- quality by standard effluent parameters	1-25	The value of 1-25% verification represents analytical data provided by external laboratories used on a portion of the effluent parameters required by NPDES permits. The rest of the effluent parameters/data are measured by internal resources.
Water consumption- total volume	Not verified	None.

Further Information

Module: Response

Page: W6. Governance and Strategy

W6.1

Who has the highest level of direct responsibility for water within your organization and how frequently are they briefed?

Highest level of direct responsibility for water issues	Frequency of briefings on water issues	Comment
Senior Manager/Officer	Scheduled - monthly	A core environmental team meets with our directors on a bi-weekly basis to discuss issues directly related to the Effluent Limitation Guidelines (ELGs) for Steam Electric Power Plants.

W6.2

Is water management integrated into your business strategy?

Yes

W6.2a

Please choose the option(s) below that best explains how water has positively influenced your business strategy

Influence of water on business strategy	Please explain
Introduction of water management KPIs	A vision or objective entitled "Water Usage" was incorporated into the company's developing environmental sustainability initiative in late 2016. Water withdrawal and water consumption are currently identified as the metrics (or KPIs) for this objective.
Water resource considerations are factored into site expansions	As actions are underway to close several coal fired plants in the next 3 to 6 years, the Company is in the process of planning to construct new electric generation. Several of the main considerations for this expansion are based on the availability of water and the condition of CWIS components at existing facilities.
Greater regulator engagement	Coming into compliance with the new ELG rule gives the Company opportunity to engage with state regulators to craft a strategy that benefits all parties. Note: This rule was stayed by the EPA until August 12, 2017 to allow for reconsideration of the rule.
Tighter operational performance standards	One example is the company's work to comply with the revised 316(b) regulations of the Clean Water Act for cooling water intake structures (CWIS). The substantial effort to comply with the revised regulations is expected to result in tighter operational performance for CWIS at the applicable facilities.
Other: Increased investment opportunities.	There are increased investment opportunities related to implementing revised environmental regulations such as the 316(b) example provided above. Another investment opportunity is the effort to comply with the revised effluent limitation guideline (ELG) rule for NPDES permitted discharges. The Company is in the process of implementing strategies to comply with the new rule, and those strategies will require a substantial capital investment. Note: This rule was stayed by the EPA until August 12, 2017 to allow for reconsideration of the rule.

W6.2b

Please choose the option(s) below that best explains how water has negatively influenced your business strategy

Influence of water on business strategy	Please explain
Closure of operations	The new ELG rule as referenced above has contributed to announcing closure of several facilities in the next 3 to 6 years, which pose great challenges for the Company. Plant closures represent significant changes in business operations, and are typically viewed as negative impacts. Note: This rule was stayed by the EPA until August 12, 2017 to allow for reconsideration of the rule. However, this regulatory development has not changed the company's strategy for closing several facilities.
Increased capital	Replacing assets that are schedule to retires, and complying with the revised rules related to water, require extensive capital investments.

Influence of water on business strategy	Please explain
expenditure	These investments can place a strain on the Company, its investors, and its customers.

W6.2c

Please choose the option that best explains why your organization does not integrate water management into its business strategy and discuss any future plans to do so

Primary reason	Please explain

W6.3

Does your organization have a water policy that sets out clear goals and guidelines for action?

Yes

W6.3a

Please select the content that best describes your water policy (tick all that apply)

Content	Please explain why this content is included
Select facilities only Performance standards for direct operations Performance standards for supplier, procurement and contracting best practice Incorporated within group environmental, sustainability or EHS policy	Extensive time and effort is being expended to methodically comply with the revised rules related to water (e.g. ELG and 316(b) rules). For example, detailed decision documents have been created for several facilities that will continue to operate past the final compliance date for the revised ELG rule. These decision documents provide a strategy and pathway toward meeting the compliance deadline and beyond. Despite stay of the ELG rule as noted in W6.2a & b above, the company continues to move forward on several tasks related to this rule. Also as noted above in W6.2a, the company has incorporated water usage strategy as part of the Force for Growth initiative.

W6.4

How does your organization's water-related capital expenditure (CAPEX) and operating expenditure (OPEX) during the most recent reporting year compare to the previous reporting year?

Water CAPEX (+/- % change)	Water OPEX (+/- % change)	Motivation for these changes
		The cells for CAPEX and OPEX are left blank because the company's accounting mechanisms do not fully segregate CAPEX and OPEX costs related to water.

Further Information

Page: **W7. Compliance**

W7.1

Was your organization subject to any penalties, fines and/or enforcement orders for breaches of abstraction licenses, discharge consents or other water and wastewater related regulations in the reporting year?

Yes, not significant

W7.1a

Please describe the penalties, fines and/or enforcement orders for breaches of abstraction licenses, discharge consents or other water and wastewater related regulations and your plans for resolving them

Facility name	Incident	Incident description	Frequency of occurrence in reporting year	Financial impact	Currency	Incident resolution
St. Clair Power Plant (Facility #9 in this CDP report)	Fine	Less than 1 gallon of oil was released from a failed cooler into the St. Clair River on 11/28/2016, causing a sheen on the surface of the receiving water. The United States Coast Guard (USCG) inspected the release and imposed a \$250 fine.	1	250	USD(\$)	The Company properly reported the incident, addressed the failed equipment, and paid the fine to the USCG.

W7.1b

What proportion of your total facilities/operations are associated with the incidents listed in W7.1a?

12%

W7.1c

Please indicate the total financial impacts of all incidents reported in W7.1a as a proportion of total operating expenditure (OPEX) for the reporting year. Please also provide a comparison of this proportion compared to the previous reporting year

Impact as % of OPEX	Comparison to last year
0	Lower

Further Information

The format for the information provided in W7.1c does not allow the Company to accurately report the impact of fine described in W7.1a. First, the fine in 2016 is lower than 2015. Second, the fine of \$250 USD is so small compared to OPEX that there are not enough allowable decimal places to show the true percentage. The amount of the fine is considered negligible in terms of impact to the Company.

Page: W8. Targets and Initiatives

W8.1

Do you have any company wide targets (quantitative) or goals (qualitative) related to water?

No

W8.1a

Please complete the following table with information on company wide quantitative targets (ongoing or reached completion during the reporting period) and an indication of progress made

Category of target	Motivation	Description of target	Quantitative unit of measurement	Base-line year	Target year	Proportion of target achieved, % value
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W8.1b

Please describe any company wide qualitative goals (ongoing or reached completion during the reporting period) and your progress in achieving these

Goal	Motivation	Description of goal	Progress
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W8.1c

Please explain why you do not have any water-related targets or goals and discuss any plans to develop these in the future

There are water related targets and goals, but they are business unit specific rather than company wide (e.g. reduce number of NPDES noncompliances). In addition, these targets and goals are for internal use only.

The company is in the process of creating targets around water usage and water consumption as part of the developing environmental sustainability initiative as mentioned in W6.2a, b & c. This initiative was started in late 2016, and will continue to be in development throughout 2017 and beyond.

Further Information

Module: Linkages/Tradeoff

Page: W9. Managing trade-offs between water and other environmental issues

W9.1

Has your organization identified any linkages or trade-offs between water and other environmental issues in its value chain?

Yes

W9.1a

Please describe the linkages or trade-offs and the related management policy or action

Environmental issues	Linkage or trade-off	Policy or action
The Effluent Limitations Guidelines rule (ELG - water related) and Coal Combustion Residual rule (CCR - solid waste related) have linkage.	Linkage	The Company continues to craft a compliance strategy that takes into consideration and links both rules. For example, the Company is seeking to modify a NPDES permit (ELG) in a manner that addresses a CCR impoundment closure (CCR). Note: The EPA applied a stay on the ELG rule until August 12, 2017 to allow for reconsideration of the rule.

Further Information

Module: Sign Off

Page: Sign Off

W10.1

Please provide the following information for the person that has signed off (approved) your CDP water response

Name	Job title	Corresponding job category
Nicholas J. Chuey	Senior Environmental Engineer	Other: Individual contributor

W10.2

Please indicate that your organization agrees for CDP to transfer your publicly disclosed data regarding your response strategies to the CEO Water Mandate Water Action Hub.

Note: Only your responses to W1.4a (response to impacts) and W3.2c&d (response to risks) will be shared and then reviewed as a potential collective action project for inclusion on the WAH website.

By selecting Yes, you agree that CDP may also share the email address of your registered CDP user with the CEO Water Mandate. This will allow the Hub administrator to alert your company if its response data includes a project of potential interest to other parties using water resources in the geographies in which you operate. The Hub will publish the project with the associated contact details. Your company will be provided with a secure log-in allowing it to amend the project profile and contact details.

No

Further Information

CDP