Welcome to your CDP Water Security Questionnaire 2020

W0. Introduction

W0.1

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

Ameren Corporation, headquartered in St. Louis, MO, is a public utility holding company with annual revenues of more than $5.9 billion and the parent company of Ameren Illinois Company (AIC), Union Electric Company, doing business as Ameren Missouri (AMO) and Ameren Transmission Company of Illinois (ATXI). Ameren serves approximately 2.4 million electric and more than 900,000 natural gas customers across 64,000 square miles in Illinois and Missouri. Ameren's net generating capacity, all of which is owned by AMO, was approximately 10,100 MWs as of 12/31/19. In 2019, AMO's energy supply was approximately 63% from coal, 23% from nuclear, 5% from hydro, 1% from purchased wind, 1% from natural gas and 7% from purchased power.

Ameren Missouri operates rate-regulated electric generation, transmission and distribution and natural gas distribution businesses in Missouri. Ameren Illinois Company operates rate-regulated electric transmission, electric distribution, and natural gas distribution businesses in Illinois. ATXI operates a rate-regulated electric transmission business.

In May 2020, we released our 2020 Ameren Sustainability Report (available at AmerenCSR.com), which offers a comprehensive view of our actions on key environmental, social and governance (ESG) matters. Ameren also participates in a voluntary industry initiative coordinated by the Edison Electric Institute (EEI) and the American Gas Association (AGA) to provide electric and gas industry investors with uniform and consistent ESG and sustainability-related metrics. EEI AGA ESG/sustainability reporting template, along with other reports, are available under the ESG section of AmerenInvestors.com.

In 2018, Ameren published a Water Resilience Assessment (available at Ameren.com/Sustainability) which assessed the current and future resilience of water resources in regions that include our service territory and major supply chain components under a variety of potential climate change scenarios. Ameren also has a goal to decrease our water usage by approximately 15 billion gallons per year, partially enabled by recent investments to transition to dry ash handling and the upgrades to wastewater treatment systems at all coal-fired energy centers, which are scheduled to be in operation after 2022. In addition, Ameren recently published a Climate Risk Report, which used science-based climate information to assess our plan against the prevailing body of knowledge around climate modeling.

Ameren's strategy for addressing climate risk is largely embedded in Ameren Missouri's (AMO) Integrated Resource Plan (IRP) which is consistent with and supports a 2 degree Celsius goal, as outlined in the Paris Agreement. The current IRP, issued in September 2017, outlines plans to significantly increase the company's renewable energy portfolio, including the planned retirement of more than half of AMO's coal-fired generation capacity over the next 20 years, with the retirement of the Meramec Energy Center by the end of 2022 and others between 2033 and 2036 and the addition of at least 700 MWs of wind generation. We expect a 400 MW wind project and the majority of a 300 MW wind project to be placed in-service by the end of 2020. We expect a portion of the 300 MW wind project will be placed in-service in the first quarter of 2021. AMO has a goal to reduce CO2 emissions 35% by 2030, 50% by 2040 and 80% by 2050, as compared to 2005 levels. AMO expects to file its next integrated resource plan in September 2020. More information is available at AmerenMissouri.com/IRP.

FORWARD-LOOKING STATEMENTS. Statements in this report not based on historical facts are considered “forward-looking” and, accordingly, involve risks and uncertainties that could cause actual results to differ materially from those discussed. Although such forward-looking statements have been made in good faith and are based on reasonable assumptions, there is no assurance that the expected results will be achieved. These statements include (without limitation) statements as to future expectations, beliefs, plans, strategies, objectives, events, conditions, and financial performance. We are providing this cautionary statement to identify important factors that could cause actual results to differ materially from those anticipated. We refer you to our Annual Report on Form 10-K for the year ended December 31, 2019, its Quarterly Report on Form 10-Q for the quarter ended June 30, 2020, and our other reports filed with the Securities and Exchange Commission, which contain a list of factors and a discussion of risks that could cause actual results to differ materially from management expectations suggested in such forward-looking statements. Except to the extent required by the federal securities laws, we undertake no obligation to update or revise publicly any forward-looking statements to reflect new information or future events.

W-EU0.1a

(W-EU0.1a) Which activities in the electric utilities sector does your organization engage in?

Electricity generation
Transmission
Distribution

W-EU0.1b

(W-EU0.1b) For your electricity generation activities, provide details of your nameplate capacity and the generation for each technology.

	Nameplate capacity (MW)	% of total nameplate capacity	Gross electricity generation (GWh)
Coal – hard	5,379	47	26,645.43
Lignite	0	0	0

Oil	312	2.7	5.8
Gas	3,761	32.8	214.83
Biomass	0	0	0
Waste (non-biomass)	14	0.1	61.51
Nuclear	1,236	10.8	9,606.25
Fossil-fuel plants fitted with carbon capture and storage	0	0	0
Geothermal	0	0	0
Hydropower	333	2.9	2,009.51
Wind	0	0	276.56
Solar	8	0.1	7.14
Marine	0	0	0
Other renewable	0	0	0
Other non-renewable	408	3.6	37.17
Total	11,451	100	38,864.2

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, 2019	December 31, 2019

W0.3

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

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 operational control is exercised

W0.6

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

Yes

W0.6a

(W0.6a) Please report the exclusions.

Exclusion	Please explain
Non- generation facilities including call centers, office buildings and administration sites, unmanned facilities (i.e. substations), and other sites unrelated to direct energy generation.	Ameren and its subsidiaries own over 800 separate facility locations including energy generation centers, administrative buildings, substations, warehouses etc. Of these, by far the largest amounts of water are used at 16 Ameren Missouri's energy centers. These use 99% of Ameren's overall water usage About four million mega liters of surface water are used annually as cooling water at the thermal cycle generation plants (coal-fired and nuclear centers) and also for pollution controls and other operations. In addition, about 66 million mega liters of surface water is used annually for direct energy generation at Ameren's three hydroelectric generation sites. The scope of this disclosure will therefore exclude all facilities except for the following 16 energy centers: 3 coal, 1 coal and natural gas, 1 nuclear, 2 hydroelectric dams, 1 pump storage, and 8 combustion turbines (CTGs). Over 99% of water withdrawn for generation operations is discharged back to surface water sources. Groundwater volume usage at our major energy centers is less than 0.01% of total withdrawal. Ameren exercises water management practices at all of our facilities to minimize water use and has invested millions of dollars in efficient water and treatment technologies. Our Water Resilience Assessment report describes the current and future resiliency of water resources in our service territory and select regions of our supply chain, and our Report on our Responsible Management of Coal Combustion Residuals (CCR) provides information regarding our efforts to reduce water usage and improve the quality of effluent consistent with corporate sustainability initiatives. Updated information on our CCR plans is available at Ameren.com/CCRFacts.
Natural Gas distribution	Ameren distributes both electricity and natural gas to customers in our service area. The operations associated with procuring and distributing natural gas to our customers uses little to no direct water resources. These operations include the use of potable water as a resource for personnel use at related sites, for hydrostatic testing, and for excavation operations to construct

	gas lines. We are implementing practices to reduce the necessary volumes of water required to perform these operations. The volumes of water used in these operations are much less than that of our electrical generation centers. Therefore, Ameren's natural gas distribution activities are excluded from the scope of this disclosure.
Solar and wind generation facilities	Ameren owns and operates 8 MW of solar nameplate capacity. Ameren Missouri has a power purchase agreement for wind energy, but did not own any wind generation in 2019. Ameren Missouri is investing in 700 MW of wind generation. We expect a 400 MW project and the majority of the 300 MW project to be placed in-service by the end of 2020. Ameren Missouri expects a portion of the 300 MW facility will be placed in-service in the first quarter of 2021. We also expect to invest in 100 MW of solar generation by 2027. These renewable generation additions will contribute to reduce water consumption volumes in future. Since solar and wind electricity generation use no water during operation, these sites will be excluded from the scope of this disclosure.

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	Direct Use: "Vital" was chosen because large volumes of freshwater from rivers in the Midwest are required for thermal cooling and pollution control at our major nuclear and fossil energy centers and energy production at our hydroelectric generation sites. Large volumes of water available is more important than the quality of the water. 99% of water withdrawn is discharged back to the environment. Should large volumes of water no longer be available at our coal and nuclear fueled energy centers, our operations would suffer significantly Fortunately, our Water Resilience Assessment

			(available at AmerenInvestors.com) indicates all of our generation facilities are located in regions with low water scarcity risk, and little change is expected in water availability through 2030. In future, we expect to decrease our reliance on large volumes of water resources since we are retiring water-intensive coal-fired energy centers. Our Meramec Energy Center is scheduled to retire in 2022. Indirect Use/Value Chain: The largest key input within the supply chain is coal, the primary fuel source for our four coal-fired energy centers. A significant amount of our coal supply is from the Powder River Basin (PRB) in Wyoming. Our Water Resilience Assessment indicated that water stress is likely to increase through 2030 in the PRB. In addition, barges are sometimes used in our supply chain to transport coal. Therefore, "important" was chosen because water is necessary for coal production, and water scarcity could affect our supplier[s] and logistics. However, we continually monitor our supply chain and are not aware of any water related risks that cannot be managed. Future Outlook: We expect to reduce our reliance on coal as we expect to retire the Meramec and Sioux Energy Centers in 2022 and 2033 respectively. We also expect to invest in 700 MW of wind generation, the majority of which is scheduled to be in service in 2020, and 100 MW of solar generation by 2027 (Ameren.com/IRP).
Sufficient amounts of recycled, brackish and/or produced water available for use	Important	Neutral	Direct Use: Some of Ameren's generation operations use recycled water. "Important" was chosen because recycled water is necessary for our closed loop and storage systems, and we have alternative measures in place should the volumes of used recycled water become disrupted. Recycled water is used at Taum Sauk, a pump storage hydroelectric facility located in Missouri, for direct energy generation. Recycled water is also used in the flue-gas desulfurization (FGD) scrubber at the Sioux Energy Center (coal-fired) and at the Callaway Energy Center (nuclear) for cooling purposes, which are both located in Missouri. Recycled water is also used at one of our combustion turbine energy centers for use in the cooling towers, although this volume is negligible

			compared to the volumes used at our fossil, nuclear and hydroelectric energy centers. Utilizing recycled water reduces the amount of water withdrawn and discharged. Future Outlook: we expect to continue our current recycled water operations, but are considering ways in which we can better measure and incorporate larger volumes of recycled water into our operations in future. Indirect Use/Value Chain: Coal from the Powder River Basin (PRB) is the primary fuel source for four coal-fired energy centers and represents the largest key input within the supply chain. Neutral was chosen because some water is used to mine coal and our Water Resilience Assessment indicated potential increased water stress in the PRB. Ameren is not currently aware of any specific brackish or recycled water related issues or improvements within this supply chain. Therefore, in the near future, we are expecting no significant changes to recycled water use in our indirect operations.

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%	All 16 energy centers covered by the scope of this disclosure calculate water withdrawals daily and included this data in monthly reports. Withdrawal flows/volumes are calculated based on design pump flow rate and run times for each energy center. It is impractical to directly measure volumes at our coal-fired and hydroelectric energy centers due to physical design limitations, scale, and technologies used at the energy generation facilities. While measured volumes are not needed for plant operations, calculated withdrawal and discharge flows are used to evaluate compliance with National Pollutant Discharge Elimination System (NPDES) permit limitations. Withdrawal volumes are measured with meters at our Combustion Turbine Generator (CTG) locations.

Water withdrawals – volumes by source	100%	Water withdrawals are calculated daily at all 16 of our coal-fired, nuclear, and hydroelectric energy centers, and included in monthly reports. All of our CTGs source water from third party sources, which are metered and recorded monthly. Ameren's coal-fired, nuclear, and dam hydroelectric energy centers withdraw water from freshwater surface and groundwater sources. For these energy centers, withdrawal flows/volumes are calculated based on design pump flow rate and run times for each energy center. The principal sources of surface freshwater are within the upper Mississippi and Missouri River basins. It is impractical to directly measure volumes at our eight largest energy centers due to physical design limitations, scale, and technologies used at the energy generation facilities. While measured volumes are not needed for plant operations, calculated withdrawal and discharge flows are used to evaluate compliance with NPDES permit limitations.
Water withdrawals quality	100%	Water withdrawals quality is monitored daily at all 16 our coal-fired, CTGs, nuclear, and hydroelectric energy centers, and included in monthly reports. The majority of our CTGs source water from third party municipalities providing quality potable water. The water withdrawal of all eight CTG facilities makes up less than 0.001% of total withdrawal. At the coal-fired energy centers, intake water is routinely monitored for temperature and total suspended solids. NPDES (wastewater) permits also require periodic chemical analysis of a broad range of parameters in intake water. At our hydroelectric dams (Osage and Keokuk) and pumped storage (Taum Sauk) energy centers, reservoir as well as upstream and downstream water quality is regularly monitored to ensure appropriate environmental quality and maintain our operational permits.
Water discharges – total volumes	100%	All 16 energy centers covered by the scope of this disclosure calculate water discharge and include this data in monthly reports for Discharge Monitoring Reports (DMRs). Large

		volumes of water are discharged from seven energy centers: four coal-fired, one nuclear, and two hydroelectric dams. Discharge flows/volumes are calculated based on design pump flow rate and run times for each energy center. Very little water is discharged from the pumped storage facility at Taum Sauk as this facility is considered a closed loop and uses recycled water. Many of the combustion turbine sites use water but their use and discharge is negligible compared to our other generation centers. For our two hydroelectric dams, withdrawal equals discharge as there is no consumption.
Water discharges – volumes by destination	100%	Water discharge is calculated daily at our 16 energy centers in scope and are included in monthly reports for Discharge Monitoring Reports (DMRs). Seven of the largest energy centers (four fossil fuel, one nuclear, and two hydroelectric dams) discharge to surface water and calculations are based on design pump flow rate and run times. All of these energy centers have wastewater treatment systems. The CTGs discharge to third party sources, includes storm water, and volumes are measured for DMRs. Total CTG discharge is less than 0.2% of Ameren's total discharge. • Three coal-fired energy centers discharge to the Mississippi River and the fourth discharges to the Missouri River. • One hydroelectric facility discharges to the Osage River, and the other is a run-of-the-river dam that spans the Mississippi River. • There is no water discharged from the closed-loop Taum Sauk pumped storage location, which uses recycled water.
Water discharges – volumes by treatment method	100%	Discharge volumes are calculated daily using design pump flow rate and run times, and reported monthly. For this calculation, Ameren's two hydroelectric dam facilities and one pump storage facility have been excluded as recommended by the CDP guidance • (Included) Three coal-fired energy centers discharge to the Mississippi River and the one discharges to Missouri River. All have

		wastewater treatment systems that are in the process of being upgraded. • (Excluded) One hydroelectric dam discharges to the Osage River, and the other is a run-of-the-river dam which spans the Mississippi River. • (Excluded) There is no water discharged from the Taum Sauk pumped storage facility as it is considered a closed loop system using recycled water. • (Excluded) The combustion turbine sites are a closed loop, discharge to third party sources and have very little discharge compared to other energy centers (< 0.001% of total). For our two hydroelectric dams, water is estimated based on river flow rates.
Water discharge quality – by standard effluent parameters	76-99	Discharges via specified outfalls are monitored for water quality as required by NPDES (wastewater) permits at all energy centers subject to wastewater quality monitoring conditions in their permits (this excludes one CTG site, meaning 99% of sites are covered). Ameren owns and operates two river-based hydroelectric facilities. • The Keokuk Renewable Energy Center is a run-of-the-river facility on the Mississippi River where water flows through at the same rate as the river's natural flow rate. • The Osage Energy Center (Bagnell Dam) withholds water in a reservoir that is used for recreation (Lake of the Ozarks) and is released in compliance with downstream flow obligations. Releases of both facilities are monitored and managed to ensure downstream flows meet regulatory criteria, as contained in our Federal Energy Regulatory Commission license.
Water discharge quality – temperature	51-75	99.99% of our water discharge is monitored for temperature, although this is only 62% of Ameren;s facilities. CTGs discharge very small amounts to surface water and many are not subject to thermal permitting requirements. The water used at all eight CTG facilities makes up less than 0.0001% of total discharge. The rest of the 99.99% discharged is monitored for temperature at the five thermal cycling facilities

		(four coal-fired, one nuclear). Thermal cooling water discharge outfalls are monitored for thermal parameters as required by NPDES (wastewater) permits at our five energy centers subject to thermal monitoring conditions. For this calculation, Ameren's two hydroelectric dam facilities and one pump storage facility have been excluded as recommended by the CDP guidance (making the total number of facilities included in the calculation thirteen).
Water consumption – total volume	100%	A small percentage of water is consumed at our major energy centers for cooling and about 99% of water withdrawn is discharged back to the environment. Consumption volumes are estimated based on energy center operations i.e. generation, and consumption factors published by regulatory agencies.
Water recycled/reused	100%	Recycled water is used at three facilities included in this scope. Volumes are monitored and calculated annually at all facilities where water is recycled according to flow balances developed and provided to regulators as part of NPDES (wastewater) permit applications. For this calculation, Ameren's two hydroelectric dam facilities have been excluded as recommended by the CDP guidance making the new total number of facilities included in the calculation fourteen (three recycle out of fourteen included). Recycled water is used at one coal-fired facility for the flue gas desulfurization (FGD scrubber), and at one nuclear facility for thermal cooling. Water is also recycled at the Taum Sauk pump storage facility, which is considered to be closed-loop system.
The provision of fully-functioning, safely managed WASH services to all workers	100%	Clean and safe potable water is available at all Ameren facilities for personnel use. The water quality is monitored at our facilities that produce their own potable water.

W-EU1.2a

(W-EU1.2a) For your hydropower operations, what proportion of the following water aspects are regularly measured and monitored?

	% of sites/facilities/operations measured and monitored	Please explain
Fulfilment of downstream environmental flows	100%	Ameren owns and operates two river-based hydroelectric facilities, where downstream environmental flows are maintained. • The Keokuk Energy Center is a run-of-the-river facility on the Mississippi River where water flows through at the same rate as the river's natural flow rate. • The Bagnell Dam (Osage Energy Center) withholds water in the Lake of the Ozarks reservoir that is used for recreation. The Osage Energy Center has downstream flow obligations. Water releases from the lake are monitored and managed to ensure that downstream flows meet regulatory criteria, as contained in our Federal Energy Regulatory Commission license.
Sediment loading	100%	Ameren owns and operates two river-based hydroelectric facilities where sediment loading is monitored. • The Keokuk Energy Center is a run-of-the-river facility on the Mississippi River where water flows through at the same rate as the river's natural flow rate. • The Osage dam withholds water in a reservoir that is used for recreation. The Osage Energy has downstream flow obligations. Water releases are monitored and managed to ensure that downstream flows meet regulatory criteria (as contained in our Federal Energy Regulatory Commission license).
Other, please specify	Not relevant	We do not measure and monitor other water aspects at this time.

W1.2b

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

	Volume (megaliters/year)	Comparison with previous reporting year	Please explain

Total withdrawals	70,566,983	Higher	The total withdrawal volume is higher than previous years ("higher" is defined as 10%-20% higher). This is primarily due to increased generation at our Osage Energy Center (hydroelectric dam) which generated almost four times as much energy as the previous year. Generation was lower the previous year due to drought conditions and construction that was occurring on site. Water withdrawals were lower at our Meremac and Sioux Energy Centers due to management of operational needs and generation scheduling in 2019. Water withdrawals are calculated daily for all generation sites within the reporting boundary. The figure reported in column two includes all of the water withdrawn annually for use in our energy generation operations included in scope. • Two of our hydroelectric operations represent the main share of our water withdrawals. These are the Keokuk run-of-river facility on the Mississippi River and the dam on the Osage River where withdrawal is calculated based on the flow through the turbine house and spillway. No water is considered to be withheld or consumed as it flows through the generation turbines • The next largest withdrawals occur at our four major coal-fired energy centers and one nuclear energy center, which also withdraw directly from the Mississippi and Missouri Rivers. • The volumes of water withdrawn for the combustion turbines and the makeup water for our pump storage facility are relatively insignificant compared to the hydroelectric, coal-fired, and nuclear energy centers (CTG withdrawal makes up less than 0.001% of total). • Future Outlook: our coal-fired Meramec Energy Center is scheduled for retirement in 2022. We are investing in 700 MW of wind generation, the majority of which is scheduled to be in service in 2020 and 100 MW of solar generation by 2027, which will reduce reliance on water-intensive generation technologies. Ameren Missouri's next Integrated Resource Plan, is expected to be filed

			in September 2020; available at Ameren.com/IRP
Total discharges	70,531,155	Higher	The total discharge volume is higher than previous years ("higher" is defined as 10%-20% higher). This is primarily due to increased generation at our Osage Energy Center (hydroelectric dam) which generated almost four times as much electricity as the previous year. Generation was so low the previous year due to drought conditions and construction that was occurring on site. Water withdrawals were lower at our Sioux and Meramec energy centers due to operational needs and generation scheduling in 2019. Water discharges are calculated daily for all generation sites included in the reporting boundary and are calculated based on withdrawal and consumption values at our coal-fired energy centers and based on pump curve values and run time at our hydroelectric facilities. • Our hydroelectric operations represent the main share of our water discharges. These are the Keokuk run-of-the-river facility on the Mississippi River and Osage on the Osage River where discharge is calculated based on pump curves and run time, and includes volumes moving through the spillway. No water is considered to be withheld or consumed as it flows through the hydroelectric generation turbines. • The next largest discharges occur at our four major coal-fired energy centers and one nuclear energy center. The volumes of water discharged for the combustion turbines are relatively insignificant compared to the hydroelectric, coal, and nuclear energy centers. • No water is discharged from our Taum Sauk pump storage facility, which reuses water and is considered a closed loop system. Future Outlook: our coal-fired Meramec Energy Center will retire in 2022 and we are investing in 700 MW of wind generation, the majority of which is scheduled to be in service in 2020 and 100 MW of solar generation by 2027, which will reduce reliance on water-intensive generation technologies. Ameren Missouri's next Integrated

			Resource Plan, is expected to be filed in September 2020 (available at Ameren.com/IRP).
Total consumption	35,828	Lower	The amount of water consumption is lower than the previous year ("lower" is defined as 10%-20% lower). This is primarily due to decreased generation at Callaway Energy Center (nuclear) due to a spring refueling outage in 2019. In addition, decreased generation at our four coal-fired energy centers due to operational needs and generation scheduling resulted in lower consumption. Water consumption is estimated monthly for all of our generation sites included in the scope and is calculated based on known generation consumption factors per MWh generated. • The largest consumer of water is our nuclear Callaway Energy Center for use in the cooling towers. • Future outlook: Our coal-fired Meramec Energy Center is scheduled for retirement in 2022 with additional coal plants closing in 2033 and 2036. As coal-fired generation facilities consume some water through evaporation, their retirement will lead to decreased volumes of consumption in the future. In addition we are investing in 700 MW of wind generation, the majority of which is scheduled to be in service in 2020, and approximately 100 MWs of solar generation. These generation technologies do not use water for generation, and will further reduce water consumption volumes from generation in future.

W1.2d

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

	Withdrawals are from areas with water stress	Identification tool	Please explain
Row 1	No	WRI Aqueduct	Ameren undertook a comprehensive study of water risks using a number of tools and from this we have concluded that water withdrawals are not from regions with high water stressed areas. This Water Resilience Assessment report in 2018 assessed the current and future availability of water

			resources across Ameren service territory and portions of our supply chain under a variety of potential climate change scenarios. The report evaluated four different publicly available climate change tools and datasets including: the World Resources Institute's Aqueduct and Water Risk Atlas, the U.S. Army Corps of Engineers' Climate Hydrology Assessment Tool, the National Oceanic and Atmospheric Administration's Climate Explorer Tool, and the U.S. Drought Monitor. The WRI Water Risk Atlas was used for the assessment because it provides a publicly available global database and an interactive tool that maps indicators of a range of water-related risks. We applied the tool to Ameren's service territory (located within the Mississippi and Missouri River Basins), and the Powder River Basin in Wyoming, where we source the majority of our coal for power generation. Water stress was evaluated within these regions according to various future scenarios. The tool was also used to projected changes from a baseline to 2030 for three future scenarios: Optimistic, Business as Usual, and Pessimistic. Definition of stressed areas: WRI defines baseline water stress to be "defined as the ratio of total water withdrawals to available renewable surface and groundwater supplies. Water withdrawals include domestic, industrial, irrigation, and livestock consumptive and no consumptive uses. Available renewable water supplies include the impact of upstream consumptive water users and large dams on downstream water availability". Higher ratio values indicate more competition among users. Low water stress is measured with a ratio of less than 10%, while high is 40% or higher. Based on the WRI tool, along with the other climate change tools and datasets included in the study, Ameren's Water Resiliency Assessment concluded that for the time period around 2030, water stress is projected to be near normal for most regions within the study area, but is likely to increase in the already arid Powder River Basin (which is relevant as a portion of Ameren's supply chain). The report concluded that there is no present or expected future water stress (for the time period around 2030) within our boundaries of direct operations. Ameren's Water Resiliency Assessment report is posted on our website at Ameren.com/Sustainability

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	70,561,801	Higher	The volume of water withdrawn is higher than the previous year ("higher" is 10-20% higher). This is primarily due to increased generation at Osage Energy Center, which used almost four times as much water (totaling 30% of 2019 surface withdrawal) compared to 2018 due to large volumes of seasonal rains. "Relevant" was chosen because we rely heavily on freshwater resources for generation operations. •The hydroelectric Keokuk and Osage Energy Centers account for 97% of total surface withdrawal, and drive our annual water withdrawal results. Withdrawal is calculated based on design pump curves and flow through the spillway. • Future Outlook: The coal-fired Meramec Energy Center is scheduled to retire in 2022. We are investing in 700 MW of wind generation, the majority of which is scheduled to be in service in 2020, and 100 MW of solar generation by 2027, which will reduce reliance on water-intensive generation. Ameren Missouri's next IRP will be

				filed in September of 2020 (Ameren.com/IRP).
Brackish surface water/Seawater	Not relevant			"Not Relevant" was chosen because our operations are not located near, nor withdraw from brackish or seawater sources. This is not expected to change.
Groundwater – renewable	Relevant	5,091	Lower	"Relevant" was chosen because shallow alluvial groundwater supplied by on-site wells is used at three of five generation facilities (two coal-fired energy centers and one nuclear energy center) for drinking water and other plant operations. • The total amount of groundwater withdrawn is very small, representing less than 0.001% of total withdrawal. Volume for 2019 is "lower" (defined as 10%-20% lower) compared to the previous year. This is primarily due to decreased generation at one coal-fired energy center. • Groundwater is used at two fossil fuel, one nuclear, and one CTG energy center. Volumes are calculated daily based on pump capacity and run time. Future outlook: The amount that is withdrawn is expected to stay relatively the same in future as our energy centers are expected to run at similar capacities to previous years.
Groundwater – non-renewable	Not relevant			"Not Relevant" was chosen because our operations do not withdrawal water from non-renewable groundwater

				resources. This is not expected to change.
Produced/Entrained water	Not relevant			"Not Relevant" was chosen because our operations included in the reporting boundary do not produce or entrain water. This is not expected to change.
Third party sources	Relevant	92.16	Lower	"Relevant" was chosen because third-party supply of potable and non- potable water is from municipal, public and/or private water providers and is used as potable water and for use in our CTG operations. Third-party water volumes are purchased, and therefore metered and reported monthly. Volumes were lower than the previous year with "Lower" being defined as 10%-20% lower than the previous year. This is primarily due to on-site holding tanks having been filled up the year before. Future Outlook: Overall, these water volumes are negligible (less than 0.001%) compared to the volumes used for total operations and the facilities are expected to run similar to previous years so no significant changes in volume withdrawal from third-party sources is expected in future.

W1.2i

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

	Relevance	Volume (megaliters/year)	Comparison with previous	Please explain

			reporting year	
Fresh surface water	Relevant	70,531,153	Higher	Water is discharged to surface water at all of our large energy centers except for our Taum Sauk pumped storage facility which has no discharge, reuses water, and is considered a closed-loop system. The total discharge volume was "higher" (10-20% higher) than last year. This is primarily due to increased generation at Osage Energy Center (hydro), which used almost four times as much water compared to 2018 due to large volumes of seasonal rains. "Relevant" was chosen because of the large volumes of water that are discharged to surface water annually. Discharge is calculated using known consumption factors, run time, and design pump flows. The CTGs discharge relatively insignificant (< 0.0001%) volumes compared to the hydro and coal-fired energy centers. Future Outlook: Our coal-fired Meramec Energy Center is scheduled to retire in 2022. We are investing in 800 MW of renewable generation which will reduce reliance on water-intensive generation technologies in future.
Brackish surface water/seawater	Not relevant			"Not Relevant" was chosen because our operations are not located near, nor discharge brackish or seawater sources. This is not expected to change in future.
Groundwater	Not relevant			"Not Relevant" was chosen because none of our operations discharge to groundwater. This is not expected to change in future.

Third-party destinations	Not relevant			"Not Relevant" was chosen because none of our operations discharge to third-party party sources. This is not expected to change in future.

W-EU1.3

(W-EU1.3) Do you calculate water intensity for your electricity generation activities?

Yes

W-EU1.3a

(W-EU1.3a) Provide the following intensity information associated with your electricity generation activities.

Water intensity value (m3)	Numerator: water aspect	Denominator	Comparison with previous reporting year	Please explain
0.83	Freshwater consumption	MWh	About the same	The intensity shown is the water intensity in cubic meters (m3) of freshwater consumed per MWh of net generation, including all generation facilities included in the reporting boundary. This intensity factor is about the same compared to the previous year. "About the same" is defined to be less than 10% different compared to the previous year. The water intensity did not change much because generation operations were similar to that of the previous year. We use water intensity internally to track and demonstrate progress in efficiency upgrade investments and several measures of intensity (including various emissions intensities) are included in our voluntary EEI ESG report that is posted on our website. Future outlook: Increased water efficiency reduces the thermal load. Therefore, we are investing in water efficiency measures, and expect to use less water in the long-term for similar loads,

				decreasing our water intensity factor in future. Water intensity reduction strategy: we are transitioning to closing our coal-fired generation technologies that use water and increasing our investment in non-water intensive generation technologies such as wind and solar. Our coal-fired Meramec Energy Center is scheduled for retirement in 2022.We are investing in 700 MW of wind which is planned to be fully in service in 2021, and 100 MW of solar generation capacity. This will contribute to reduced water intensity in future. As of 2019, Ameren has permanently discontinued wet transport of coal ash at eight of its 12 coal combustion units, and are transitioning all units scheduled to operate past 2022 to dry ash handling, which reduces water intensity. We have a planned annual savings of 15 billion gallons of water a year. In addition, the wastewater treatment systems are being upgraded, making them more efficient, at our three coal-fired energy centers. Ameren Missouri's next Integrated Resource Plan is expected to be filed in September 2020 (available at Ameren.com/IRP).

W1.4

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

Yes, our suppliers

Yes, our customers or other value chain partners

W1.4a

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

Row 1

% of suppliers by number

1-25

% of total procurement spend

26-50

Rationale for this coverage

Ameren is a member of the Electric Utility Industry Sustainable Supply Chain Alliance (EUISSCA) which collaborates with other utilities and suppliers to advance sustainable best practices in supply chain. EUISSCA created an assessment for suppliers to disclose sustainability information, including water-specific aspects, and to indicate actions they are willing to take to improve.

In 2019, Ameren asked 100 suppliers to complete the assessment (representing 48% of annual spend). Suppliers are selected based on (1) top annual spend due to top suppliers having a large impact within our supply chain and (2) those having a unique position in our supply chain or pose a risk to core business.

While voluntary, suppliers are incentivized to participate because the assessment offers industry specific benchmarking information and the quantified value (e.g. financial, environmental etc) of taking certain actions, which provides suppliers a value-creating, cost-free, best-practice road map.

Impact of the engagement and measures of success

The assessment asks suppliers about their sustainability practices including energy, waste, and water, among other topics. Questions are specific to supplier industry however, a section on water-related topics is included in each version i.e. total water withdrawals and discharge, or if a supplier implements water minimization practices. Suppliers can also indicate planned actions they will take to enhance sustainability or water-related practices. In 2019, 37% of Ameren suppliers asked to fill out the assessment responded. 27 suppliers indicated they will get a water inspection to identify reduction opportunities and 18 indicated they would install water conserving plumbing components.

Participation in the survey is used internally to help Ameren partner with suppliers and promote best practices. Success is measured by the number of suppliers who respond, and the number of suppliers that indicate they are pursuing more sustainable practices.

Comment

In an effort to address common questions and challenges regarding how to address sustainability, the EUISSCA was formed in 2008 and was registered as a 501 (c) 6 on-profit corporation.

Ameren looks forward to engaging with more Suppliers and increasing participation in the sustainability assessment, collaboration on sustainability topics, and transparency in the future.

W1.4b

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

Type of engagement

Innovation & collaboration

Details of engagement

Encourage/incentivize innovation to reduce water impacts in products and services

% of suppliers by number

1-25

% of total procurement spend

1-25

Rationale for the coverage of your engagement

Since we are a member, Ameren attends EUISSCA's annual conference which brings member utilities and supplier affiliate members together to hear from leading experts on the sustainability and water-related challenges and best practice trends. Utilities and suppliers have the opportunity to discuss topics and services together in ways that promotes innovation and collaboration across the utility industry and prioritizes engagement with suppliers on sustainability topics. For example, one utility shared its zero waste and circular supply chain efforts, which conserves water in upstream raw material processing. Current and potential suppliers are incentivized to join the conference, as they have an opportunity to set up one-on-one meetings with key Ameren leaders and decision makers to present their goods/services related to addressing sustainable best practices. Over 250 attended the 2019 conference, offering a large platform for collaboration.

Impact of the engagement and measures of success

Such a setting allows for valuable alignment of water and sustainability related goals. Therefore, success is measured by the number of affiliate supplier members that join EUISSCA. The resulting impact of more suppliers becoming members of EUISSCA is that more suppliers are able to be engaged with Ameren and other utilities on sustainability and water-related topics, such as water reduction in coal handling and circular economy/ zero waste efforts which reduce water use in upstream manufacture of raw materials.

In addition, member suppliers are able to be a part of EUISSCA's monthly supplier highlights. Each month, a supplier is chosen to give a presentation to all of EUISSCA members on a conference call. This has proven lucrative for the suppliers and productive for utilities who have increased information and awareness to top goods and services that are focused on addressing water and other sustainability related challenges.

Comment

Ameren is a member of the Electric Utility Industry Sustainable Supply Chain Alliance (EUISSCA; known as just "The Alliance") which leads the industry in enhancing and promoting supply chain sustainable practices across utilities and suppliers.

W1.4c

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

In order to provide safe, reliable and affordable energy in an environmentally responsible manner, we continuously evaluate how we can reduce our impact on the climate, reduce water usage and promote wildlife habitats.

Rationale: We prioritize customer and partner engagements as a way to identify and meet the needs of our customers while also supporting the environment. The success of our customers is seen as success at Ameren.

Engagement: We work with municipalities as they (1) regulate the spaces in which we work, and (2) can help us to decrease our water-related impact. For example, we are partnering with the St. Louis Metropolitan Sewer District to reconstruct the parking lot at our Development & Resource Center to better manage water runoff, enhancing the health of local streams.

We engage with local communities, customers, media, and special interest organizations because these are our customers and we strive to understand their needs so we can support them and minimize our impact from operations. For example, in 2019 we held several open house style events to engage with the public on pertinent issues, including our water-related CCR closure plans at our four coal-fired energy centers.

Measures of Success: We collect customer feedback through multiple channels to assess customer satisfaction and engagement: we participate in syndicated JD Power customer satisfaction studies, conduct online surveys and focus groups, and measure satisfaction with specific customer touchpoints (i.e. Ameren Listens campaign reaches out directly to customers who have had a co-worker interaction and measures satisfaction). In recent years, Ameren Illinois and Ameren Missouri each ranked in the Top 5 Midwest Utilities in the JD Power Business Electric Key Accounts Study, which is a signal of successful engagement.

W2. Business impacts

W2.1

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

No

W2.2

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

No

W3. Procedures

W-EU3.1

(W-EU3.1) How does your organization identify and classify potential water pollutants associated with your business activities in the electric utilities sector that could have a detrimental impact on water ecosystems or human health?

Ameren evaluates water-related issues regularly as part of the overall business strategy and long-term financial planning. Water-related considerations are driven by the Clean Water Act and include thermal discharges, organism entrainment and impingement, effluent constituent limitations, and coal combustion residuals (CCR) rule requirements. Ameren identifies and classifies potential water pollutants based on environmental regulatory requirements and the compliance methodologies that are in place for such requirements. We also respond to interactions with our customers and stakeholders.

We maintain current National Pollutant Discharge Elimination System (NPDES) permits that ensures discharges at our energy centers comply with applicable state water quality standards. The NPDES process follows the pollutant list found in the Code of Federal Regulations at 40 CFR 401.15. During the NPDES permitting process, the state permitting agency and Ameren work together to determine the applicable industrial processes present. Through this interaction, we identify potential water pollutants that may include: hydrocarbons, CCR, radiation, thermal discharges, and additional pollutants included on the federal Clean Water Act.

Dedicated Ameren water quality personnel continually monitor water quality and prepare reports to regulatory agencies. Potential regulatory changes are monitored and business risks and opportunities are identified, which are then regularly reported to multiple teams including senior executives, throughout Ameren. Subject matter experts also participate in research programs of the Electric Power Research Institute and other industry groups, including the Edison Electric Institute, to stay abreast of emerging issues and new information to enhance understanding of pollution and constituents of concern. Effluent quality is monitored routinely. An example of how we interact with current water standards and perform additional research programs is detailed in the following: As per Special Condition requirements of the current NPDES operating permits at certain Energy Centers, Ameren is required to complete further sampling and research towards the CWA 316(b) Cooling Water Intake Structure study. Multiple studies are currently being performed, culminating in a comprehensive review/report to be submitted to the Missouri Department of Natural Resources with the next permit renewal application for each facility (this excludes the Meramec Energy Center which will cease operations by year-end 2022). The 316(b) reporting requirement occurs at four of our five coal facilities and 1 nuclear generating facility. The study has already been submitted for Callaway and Labadie Energy Centers and the additional completion and submittal deadlines are as follows: Sioux Energy Center – March 2022, and the Rush Island Energy Center with an estimated deadline of late 2024.

In addition, we recently performed ecological and human health risks assessments associated with operations and CCR management at our four coal generating facilities. These studies, conducted by Haley and Aldrich, considered discharges to both receiving stream surface

waters and adjacent ground water resources. All four studies concluded that there were no risks to human health or the environment. The reports are available on Ameren's web site at: https://www.ameren.com/company/environment-and-sustainability/managing-coal-combustion/water-quality
In response to the US EPA's CCR Rule, Ameren installed groundwater monitoring wells around each of the impoundments and landfills at our coal-fired energy centers. Annual groundwater monitoring reports are available at: https://www.ameren.com/company/environment-and-sustainability/managing-coal-combustion/ccr-compliance-reports
All of the above processes and considerations are applied to our direct operations and success is measured by our permit compliance rate; we strive each year to have zero environmental permitting violations that are applicable for our direct business activities. Standards vary State by State for operations due to differences in technologies and local conditions and impacts.

W-EU3.1a

(W-EU3.1a) Describe how your organization minimizes the adverse impacts of potential water pollutants associated with your activities in the electric utilities sector on water ecosystems or human health.

Potential water pollutant	Description of water pollutant and potential impacts	Management procedures	Please explain
Hydrocarbons	Toxicity studies have identified alkyl benzenes and naphthalene as chemicals of concern in hydrocarbons because of their water solubility and rapid partitioning into aquatic organisms. For hydrocarbons to constitute a threat to human health or the environment, concentration levels must exist above a health based screening level and there must be a pathway of actual exposure.	Compliance with effluent quality standards Measures to prevent spillage, leaching, and leakages Emergency preparedness	Ameren's strategy is to continually comply with and exceed permitting and regulatory requirements while also minimizing the impact of operations on the environment. The EPA regulates direct discharges from our facility operations and issue NPDES Permits. Routine analysis of effluent verify compliance to standards. Each Ameren facility with 1,320 gallons or more of oil storage has instituted a Spill Prevention Control and Countermeasures (SPCC) Plan to aid the facility in preventing oil spills, leaching, and leakages from reaching navigable waters. Monthly SPCC inspections evaluate oil storage areas for compliance

			with the plan. Ameren's SPCC Plans also have response procedures to manage and minimize the impact of a spill. Spill kits and clean up material are maintained near locations of potential spills. Ameren employees receive annual spill response training and drills to maintain emergency preparedness. Success is measured through speed of response to spill emergencies, and our compliance with permit standards. We strive for 100% compliance.
Coal combustion residuals	Coal Combustion Residuals (CCR) is defined as fly ash, bottom ash, boiler slag, and flue gas desulfurization materials generated from burning coal to make electricity. CCRs are regulated as non-hazardous solid waste under the Resource Conservation and Recovery Act. Coal ash contains mostly silicon, iron, and aluminum with trace amounts of mercury, cadmium, and arsenic among other metals. Without proper management, these contaminants can pollute waterways, ground water, drinking water, and could damage the habitat of local threatened and endangered fish. For a pollutant to constitute a	Compliance with effluent quality standards Measures to prevent spillage, leaching, and leakages Community/stakeholder engagement Emergency preparedness	Ameren has four coal-fired energy centers that manage Coal Combustion Residual (CCR) in various impoundments and landfills that are regulated by the National Pollutant Discharge Elimination System (NPDES). These facilities are subject to numerous federal and state regulatory programs covering solid waste management and wastewater treatment and discharge. In order to maintain low risk of leaching or leakages, ongoing off-site sampling adjacent to our energy centers confirms that surface waters that serve as a public water supply resource comply with drinking water standards. We regularly monitor for groundwater impacts at the energy centers to comply with permitting requirements and to

	threat to human health or the environment, concentration levels must exist above a health based screening level and there must be a pathway of actual exposure. It is important to comply with the various federal and state regulatory programs related to CCR management in order to ensure minimal impact to human health and the environment.		minimized risk regarding public health or the environment. In addition, in 2018, we conducted ecological and human health risks assessments associated with our operations and CCR management at all four coal-fired energy centers. These studies considered discharges to both receiving stream surface waters and adjacent ground water resources. We also identified the location and depth of all private wells located within a mile of our facilities. All four studies concluded that the surface impoundments do not present a risk to human health or the environment. As of 2019, Ameren has permanently discontinued wet transport of coal ash at 8 of its 12 coal combustion units, and are transitioning all units scheduled to operate past 2022 to dry ash handling. The four units which have not been transitioned are located at the Meramec Energy Center, and are scheduled to retire in 2022. The dry handing of CCR will use significantly lower volumes of water, enhancing the efficiency of water use and further reducing the risk of surface and groundwater contamination in future. Success in CCR management is measured by striving for a 100%compliance rate with strict regulations and the total gallons saved annually, which

			is currently 15 million gallons per year. Ameren engaged with communities and stakeholders on CCR issues by holding four public meetings, one each near the four energy centers in May 2019. Attendees asked questions and left written comments. Additional comments were received via email. Ameren notified media outlets and posted information about the public meetings on its website. Technical reports concerning CCR, 2019 annual groundwater monitoring reports, and extensive answers to the community's comments and questions, are available on Ameren's web site.
Radiation	Radiation has an ionizing effect on living matter, and different particles can penetrate various layers of material posing serious radiation poisoning dangers to humans and environments in the event of a contamination event. As nuclear power plants use Uranium-235 (a radioactive material), the primary concern is radiation exposure. The risk of radiation exposure at nuclear power plants in the United States is small because of the diverse and redundant barriers and	Compliance with effluent quality standards Measures to prevent spillage, leaching, and leakages Community/stakeholder engagement Emergency preparedness	Our sole nuclear generating facility, the Callaway Energy Center, is subject to stringent controls per the terms of its federal Nuclear Regulatory Commission (NRC) license, as well as other state and federal regulations and permit programs. Routine monitoring is performed and reported annually to the state of Missouri and the NRC. All effluents are sampled, analyzed and treated prior to discharge. We comply with radiation dose limits for the public and employees, monitor discharge and the surrounding environment, and

	safety systems in place at nuclear power plants, the training and skills of the reactor operators, testing and maintenance activities, and the regulatory requirements and oversight of the U.S. Nuclear Regulatory Commission. In addition, cooling water it is never in contact with the nuclear part of the plant but only cools the condenser in the turbine hall.		provide annual reports to the NRC. In addition, our internal procedures include written compliance plans, consistent monitoring, biological studies, self-assessments and internal audits, staff training, and implementation of best management practices. These measures ensure that no harmful levels of radiation enter waterways or the surrounding environment. Ameren Missouri also has sufficient installed spent fuel storage including wet pool and recently completed dry cask storage capacity sufficient for the licensed life of the facility. Callaway also participates in the Nuclear Energy Institute's Ground Water Protection Initiative which identifies improvement of utilities' management and response to inadvertent release of radioactive substances may result in low but detectible levels of plant-related materials in subsurface soils and water. In order to engage the community and stakeholders, we invite the media and lawmakers, regulators, and other stakeholders at least once a year for an on-site tour of our nuclear operations and average about 60 tours a year (or about 4-6 tours a month). We also publish an annual calendar for the community that contains important safety information. It is mailed to more than 10,000 homes and

			businesses across 4 counties in mid-Missouri. With regard to security and emergency preparedness, Ameren Missouri has spent more than $24 million on security enhancements and additional security manpower since 2001. Nuclear plant security is routinely tested in drills and exercises every year. In addition, the NRC conducts “force on force” exercises at each plant at least once every three years. The most recent was conducted at Callaway in Feb. 2020. Although details are confidential, no regulatory findings, violations or unresolved items were reported. Success is measured by striving to achieve a 100% compliance rate with applicable laws and regulations.
Contaminated cooling water	Large volumes of water are used at thermal cycle power plants as cooling water. At nuclear power plants, cooling water could become contaminated with radio nucleotides which can damage cell DNA. As nuclear power plants use large volumes of water, of primary concern is allowing no amount of radiation to pollute the water that is used. The risk of such radiation contamination at nuclear power plants in the United States is small because of	Compliance with effluent quality standards Emergency preparedness	Our coal and nuclear generating facilities are located along two of the largest rivers in the United States and use those rivers as sources of cooling water. Water is withdrawn for use as cooling water and discharged back to the source using non-contact cycles, meaning there is low risk of carrying contaminants when discharged to the environment. All effluents are sampled, analyzed and treated prior to discharge. We ensure we

	the diverse and redundant barriers and safety systems in place at nuclear power plants, the training and skills of the reactor operators, testing and maintenance activities, and the regulatory requirements and oversight of the U.S. Nuclear Regulatory Commission. In addition, cooling water it is never in contact with the nuclear part of the plant but only cools the condenser in the turbine hall.		comply with radiation dose limits for the public and employees, monitor discharge and the surrounding environment, and provide annual reports to the NRC. In addition, our internal procedures include written compliance plans, consistent monitoring, biological studies, self-assessments and internal audits, staff training, and implementation of best management practices. These measures ensure that no harmful levels of radiation enter waterways or the surrounding environment. Success is measured by striving to achieve a 100% compliance rate with applicable laws and regulations.
Thermal pollution	Elevated temperatures in cooling water discharges may result in either acute or chronic toxicity to aquatic life in the receiving stream, dependent upon temperatures and exposure.	Compliance with effluent quality standards	Thermal impacts from our five coal and nuclear generating facilities are studied extensively. These include evaluations of entrainment and impingement aquatic organisms in cooling water systems and resulting cooling water effluent. With relatively recent revisions to thermal and water intake provisions in the federal Clean Water Act ("Sections 316 a and b"), updated and expanded studies have been included in the latest round of wastewater NPDES wastewater permits and are currently underway. The purpose of these studies is to determine whether Ameren facilities are having an adverse impact on the

			aquatic organisms in the adjacent rivers. Several studies have been completed and submitted to the permitting authority while several are ongoing. Interim results from one of these studies for the Labadie Energy Center concludes that the balanced indigenous community of aquatic organisms near the thermal discharge are adequately protected and are not adversely impacted. Success is measured by striving to achieve a 100% compliance rate with applicable laws and regulations.

W3.3

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

Yes, water-related risks are assessed

W3.3a

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

Direct operations

Coverage

Full

Risk assessment procedure

Water risks are assessed as part of an enterprise risk management framework

Frequency of assessment

Annually

How far into the future are risks considered?

More than 6 years

Type of tools and methods used

Tools on the market

Enterprise Risk Management

Databases

Tools and methods used

WRI Aqueduct

Comment

We have a robust enterprise risk management (ERM) to identify, evaluate and manage risks. An internal Climate and Environmental Advocacy Team meets monthly to discuss ongoing and emerging environmental topics including air, water, and waste related to both our direct operations as well as within our supply chain. Our ERM experts regularly attend these meetings to incorporate ongoing topics into risk assessment considerations. For those water risks with the potential to cause substantive financial impact (>$1 million), the ERM team reaches out to Subject Matter Experts who provide details of the potential risks. The risks are scored and summarized and (at a minimum) reported to the Risk Management Steering Committee (or on an as-needed basis). We also conduct timely additional assessments on an as-needed basis for any issues among our stakeholders. In 2018 we conducted a Water Resilience Assessment which used the WRI Aqueduct and similar tools to assess current and future availability of water resources in Ameren's regions of direct operations. The report found that our direct operations are located in areas of low water stress risk through 2030. We are in the process of updating this assessment. Full coverage of our direct operations was chosen because it is a priority to include and assess water-related risks in all of our direct operations.

Supply chain

Coverage

Partial

Risk assessment procedure

Water risks are assessed as a standalone issue

Frequency of assessment

Annually

How far into the future are risks considered?

More than 6 years

Type of tools and methods used

Tools on the market
Enterprise Risk Management
Databases

Tools and methods used

WRI Aqueduct

Comment

Our ERM team regularly interacts with our internal Climate and Environmental Advocacy Team which meets monthly to discuss ongoing and emerging environmental topics

including air, water, and waste in both our direct operations as well as within our supply chain. Subject matter experts are consulted for water risks identified with the potential to cause substantive financial impact (>$1 million). The risks are scored and summarized and (at a minimum) reported to the Risk Management Steering Committee (or on an as-needed basis).
We also conduct timely assessments on an as-needed basis for any issues concerning water among our stakeholders. In 2018 we conducted a Water Resilience Assessment which used the WRI Aqueduct and similar tools to assess current and future availability of water resources in key areas of Ameren's supply chain operations, including the Powder River Basin (PRB), where we source the majority of our coal. The report found that the PRB might experience increased water stress risk through 2030. We are in the process of updating this assessment. We are members of the Electric Utility Industry Sustainable Supply Chain Alliance where we engage several times annually with our or top suppliers by spend on sustainability and water-related issues in order to stay in communication with our suppliers on these issues. Partial coverage was selected because our supply chain is so large that it is unrealistic to assess these risks in depth across the full supply chain.

Other stages of the value chain

Coverage

None

Comment

Water risks are not assessed in other stages of our value chain

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, sometimes included	Ameren's primary energy centers are located within the lower Missouri and middle Mississippi river watersheds and rely heavily on large volumes of surface water resources for cooling water. Although our facilities are geographically situated in an area of ample water supply, we strive to minimize the impact of our operations on water quality and use in order to meet strict environmental regulatory compliance and practice environmental stewardship. "Relevant, sometimes included" was selected because we monitor water levels in surrounding rivers. This is important because this data can alert us to any stressed water level conditions that may affect generation. Historically, water availability in our operating region has not been a cause for concern. Ameren conducted a voluntary Water Resilience

		Assessment to determine the current and future availability of water resources under a variety of potential climate change scenarios that may influence water resources and water availability. Water stress is projected to be near normal for most regions within Ameren's service area, but is likely to increase in the Powder River Basin, where much of our coal is sourced. We are continually assessing the risks, complying with environmental considerations for permitting, and evaluating the impacts our operations have on the surrounding watersheds. We are using publicly available databases and tools (i.e. WRI Aqueduct, USACE Climate Hydrology Assessment Tool, among others) to assess water resource availability risks.
Water quality at a basin/catchment level	Relevant, sometimes included	Ameren's primary energy centers are located within the lower Missouri and middle Mississippi river watersheds. Water quality in these large river systems is adequate for our uses. "Relevant, sometimes included" was selected because we rely on these water basin resources for large volumes of cooling water for our generation operations. These energy centers are required to remain in compliance with NPDES permits which therefore water quality at a basin and catchment level are included in our water-related risk assessments. Water used from these sources are used in non-contact processes. Historically, this has remained unchanged, and we anticipate no major changes in future. Nonetheless, Ameren conducts routine monitoring of temperatures and total suspended solids at our facility intakes in order to continually monitor for potential future changes in quality. In connection with NPDES (wastewater discharge) permit renewals, we monitor intake and effluent water for a broad range of chemical constituents. In addition we performed risk assessments of river water quality around ash basins as part of the CCR and ash basin studies related to potential exposure pathways from constituents of concern potentially leaching from ash basins into groundwater and then the rivers.
Stakeholder conflicts concerning water resources at a basin/catchment level	Relevant, always included	"Relevant, always included" was selected because we actively communicate with key stakeholders and participate in stakeholder meetings on water-related issues so that they may stay informed, and so we can continue to hear their needs and respond accordingly. The primary opportunity and tool for such communications is our participation on the Missouri River Recovery Implementation Committee to make recommendations and provide guidance on a study of the Missouri River and its tributaries and on the existing

		Missouri River recovery and mitigation plan. In addition, we are aware of the impact of current environmental laws and new, more stringent, or changing requirements, including those related to the Affordable Clean Energy Rule, regulations regarding air emissions and effluent discharges, evaluation of cooling water intake structures, the management of coal combustion residuals, and energy efficiency requirements. We engage with our stakeholders on these topics, as failing to do so could limit or terminate the operation of certain of Ameren Missouri's energy centers, increase our operating costs or investment requirements, result in an impairment of our assets, cause us to sell our assets, reduce our customers' demand for electricity or natural gas, or otherwise have a negative financial effect.
Implications of water on your key commodities/raw materials	Relevant, always included	"Relevant, always included" was selected because the primary fuel source (raw material) at Ameren Missouri's coal-fired energy centers comes from the Powder River Basin (PRB). These coal mines are located in northeastern Wyoming which could experience increased water stress in the future. This was concluded after conducting a Water Resiliency Assessment which used (among others) the WRI Aqueduct tool to examine projected water stress in regions of our direct operations and the PRB. However, this is not expected to impact our coal supply. We are equipped to source alternatives should long-term impacts affect energy fuel procurement. In addition, the Meramec coal-fired generation center is scheduled to retire in 2022, reducing the number of generation facilities utilizing coal as a fuel source We are investing in 700 MW of wind generation. We expect a 400 MW project and the majority of the 300 MW project to be placed in-service by the end of 2020. Ameren Missouri expects a portion of the 300 MW facility will be placed in-service in the first quarter of 2021. We also expect to invest in 100 MW of solar generation by 2027. The increase of renewable energy generation capacity will support a reduction in reliance on water resources with regard to key commodities and raw materials.
Water-related regulatory frameworks	Relevant, always included	Ameren's primary energy centers are located within the lower Missouri and middle Mississippi river watersheds. Our coal and nuclear powered energy centers rely on large volumes of water for cooling. Flows on the Missouri, and to a lesser extent the Mississippi, are managed by various agencies, including most significantly the US Army Corps of

		Engineers. Therefore, all of our energy centers are subject to compliance under various state and federal regulations including the Clean Water Act and compliance with water discharge permits such are NPDES. "Relevant, always included" was selected because compliance with applicable water regulatory frameworks is a critical way to manage regulatory risk. We also participate in various stakeholder and regulatory review groups that monitor activities and provide feedback on potential changes that might affect water availability or water quality so as to continue operations.
Status of ecosystems and habitats	Relevant, always included	"Relevant, always included" was selected because ecosystems and habitats are currently considered at generating facilities when making plant modifications/changes and during regulatory permit actions. This is important in order to remain compliant with strict environmental regulations and being exposed to regulatory risk. In addition, land and water habitats are considered when constructing or modifying transmission lines and natural gas distribution systems for the same reasons. For example the Illinois Rivers transmission project included endangered bat and frog species studies and protection actions as well as habitat restoration activities included planting of pollinator-friendly vegetation. Another opportunity for communications regarding endangered species and habitat protection/restoration is in conjunction with our participation on the Missouri River Recovery Implementation Committee. River basin management - Ameren participates in the Missouri River Recovery Implementation Committee Advisory Group. Membership includes 29 stakeholders: federal agencies, states, tribes, and non-governmental stakeholders. The purpose of the Advisory Group is to study the Missouri River and its tributaries to determine actions required to recover federally listed species under the Endangered Species Act while balancing such actions with the risks and benefits to other designated purposes of the US Army Corps of Engineer's river management system.
Access to fully-functioning, safely managed WASH services for all employees	Relevant, always included	Potable water is available for personnel to use for sanitation and hygiene at each facility. It is important to provide this for the health and safety of our co-workers. As part of our commitment to our employees, the water quality is monitored at our facilities that provide potable

		water to ensure that it is safe for drinking the facilities are incompliance with applicable Ameren and regulatory drinking water supply and treatment systems requirements. Suppliers of potable water are regulated and accountable for supplying adequate water quality. Given the facilities in our region, this is not anticipated to be an area of concern in the future.
Other contextual issues, please specify	Not relevant, explanation provided	No other contextual issues are considered at this time.

W3.3c

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

	Relevance & inclusion	Please explain
Customers	Relevant, always included	Ameren provides safe, reliable, affordable, and cleaner energy that is foundational to the well-being and security of millions of people, as well as the economy of our region and country. In order to do this, customers' needs are always considered in our water-related risk assessments as they also live and work in our areas of operation. For instance, we did not have any water-related regulation violations in 2019.This demonstrates our compliance with strict environmental and regulatory standards and our history of operating responsibly in the regions where our customers live. In addition, we work hard to be transparent with our customers by participating in a variety of water-related sustainability disclosures. This includes annual response to the CDP Water Security Questionnaire, our annual Sustainability/CSR report, the EEI/AGA ESG/Sustainability template, our Climate Risk Report, and our Water Resiliency Assessment, which all detail aspects of our water-risk assessments and water-related information. In particular, the Water Resiliency Assessment examined water resources across a broad region of the United States, including the Midwest, under a variety of climate change assumptions. These regions include the communities in which our customers live and work. The report evaluated four different publicly available climate change tools and datasets, including the World Resources Institute's Aqueduct and Water Risk Atlas. The tool incorporated other water users at the basin/catchment level as well. In the tool, baseline water stress was measured as the

		ratio of total water withdrawals to available renewable surface and groundwater supplies. Water withdrawals include domestic, industrial, irrigation, and livestock consumptive and non-consumptive uses, which includes our customers living in the regions of our operations. We hold an annual stakeholder meeting associated with our Integrated Resource Plan (IRP) process, as well as regular public engagement sessions to address relevant and important topics to our stakeholders. Stakeholders, including NGOs, special interest groups, customers and local community members, are invited to attend and participate. In addition, we often meet with the public during new facility planning and construction, as well as for projects at existing facilities. We ensure we engage with groups and permitting requirements that have special interest in historic or natural resources.
Employees	Relevant, always included	Our Water Resiliency Assessment focused on the potential climate change impacts on water availability, as water is needed for our largest generating facilities. The water resilience assessment examined water resources across a broad region of the United States including the Midwest and Great Plains under a variety of climate change assumptions. These regions include the communities in which our co-workers live and work. In addition, we engage Ameren employees on water-related issues as they are the stewards of the work Ameren seeks to accomplish, and work to create a company culture that promotes sustainable business practices. We recently published a biodiversity policy that aims to reduce, minimize, or avoid impacts on biodiversity as we develop infrastructure or conduct operations throughout our organization. We consider biodiversity and mitigation measures or enhancements to the ecosystems of the lands and waterways we manage. In addition, across Ameren, we have outlined new construction guidelines to promote constant improvement of water management by reducing volumes used in excavation and hydrostatic testing, and to better manage runoff from our sites and ensuring no contaminated runoff.
Investors	Relevant, always included	Ameren is an investor-owned utility, and we consider our investors in our water resilience efforts because they are a key stakeholder in our business operations and supply chain, and environmental issue are increasingly gaining attention by large investment institutions. We consider our investors by assessing risks associated with our operations, while also providing a fair return to our investors. In addition, we dedicate significant time and resources to report and remain transparent with our investors by participating in the CDP Climate and CDP Water

		Security disclosures so that they remain aware of how we are assessing and responding to water-related risks. We engaged with our shareholders on various occasions to answer questions and provide details on issues they care about. Information related to our water performance, metrics, and goals are publicly available to our investors through on our Sustainability Website (Water Resiliency Assessment, Climate Risk Report, Sustainability Report, site assessments and compliance with regard to water-related issues) as well as our Ameren Investor website (EEI/AGA ESG/Sustainability Template metrics). In addition, we are in the process of enhancing communications with investors that highlight and define our goals for reducing water in a clear manner, along with other sustainability metrics and activities of interest to investors. We request input from investors on a regular basis regarding issues of concern to them and expectations for transparency and environmental stewardship, including matters related to water.
Local communities	Relevant, always included	Local communities are always considered in our water-related risk assessments as these communities represent the customers and employees that are so critical to our continued safe and sustainable operations. With regard to water-related risk, our Water Resilience Assessment informed and helped us better understand the degree of water scarcity risk in our business and operation territories. Our Water Resiliency Assessment examined water resources including regions with communities in which our customers live and work. The report evaluated four different publicly available climate change tools and datasets, including the World Resources Institute's Aqueduct and Water Risk Atlas. The tool measured baseline water stress as the ratio of total water withdrawals to available renewable surface and groundwater supplies. Water withdrawals include domestic, industrial, irrigation, and livestock consumptive and non-consumptive uses, which includes the local communities living in the regions that were assessed. Both Ameren and our local communities are dependent on sustainable sources of freshwater and it is important to understand how we play a role alongside our local communities. We hold an annual stakeholder meeting associated with our Integrated Resource Plan (IRP) process, as well as regular public engagement sessions to address relevant and important topics to our stakeholders. Stakeholders, including NGOs, special interest groups, customers and local community

		members, are invited to attend and participate. In addition, we often meet with the public during new facility planning and construction, as well as for projects at existing facilities. We ensure we engage with groups and permitting requirements that have special interest in historic or natural resources.
NGOs	Relevant, always included	We work hard to remain aware of external public opinions related to our operations and business. We engage with NGOs on water-related issues as they can provide valuable perspective on limiting impacts to the environment, landowners and communities. We hold an annual stakeholder meeting associated with our Integrated Resource Plan (IRP) process, as well as regular public engagement sessions to discuss relevant and important topics with our stakeholders. Stakeholders, including NGOs, customers and local community members, are invited to attend and participate by discussing their concerns and providing input. In addition, we often meet with the public during new facility planning and construction, as well as for projects at existing facilities. NGO's have been involved in our CCR operations and conversation to dry-ash handling.
Other water users at a basin/catchment level	Relevant, sometimes included	Ameren conducted a Water Resiliency Assessment that evaluated four different publicly available climate change tools and datasets including the World Resources Institute's Aqueduct and Water Risk Atlas. The WRI Aqueduct tool was used to identify areas of water stress within the three watersheds where Ameren direct operations are located, as well as in portions of the supply chain. The tool incorporated other water users at the basin/catchment level. In the tool, baseline water stress is measured with the ratio of total water withdrawals to available renewable surface and groundwater supplies. Water withdrawals include domestic, industrial, irrigation, and livestock consumptive and no consumptive uses. Available renewable water supplies include the impact of upstream consumptive water users and large dams on downstream water availability. Higher values indicate more competition among users. In addition, Ameren meets and collaborates with local water users/providers including Ameren Water Company and the Metroplitan Sewer District of St. Louis to stay connected with relevant entities on water issues, as we understand water is a shared regional resource.
Regulators	Relevant, always included	Water is a critical resource in our energy generation activities. Therefore, we include those issues important to regulators in our risk assessments in order to stay updated on best-practice with regard to water-related regulations and standards, and so we can retain the applicable licenses and permits required to operate and use this critical resource responsibly, Ameren

		regularly meets with state and federal regulatory agencies including the Missouri Department of Natural Resources (MDNR), Missouri Department of Conservation (MDC), US Army Corps of Engineers (USACE), U.S. Fish and Wildlife Service (FWS), regional watershed groups (Missouri River), along with local and regional non-governmental organizations (NGOs) to stay updated on regulations and best practices. We have achieved success of having no water-related regulation violations in 2019, which is how we measure success, which exemplifies our work to keep a 100% compliance rate with strict environmental and regulatory standards for our operations. We do this because we value water stewardship, and prioritize responsible use of water resources in the regions where our customers live.
River basin management authorities	Relevant, always included	Water is a critical resource in our energy generation activities and it is important to use this resource responsibly. Therefore, we include and engage with managers of river basins and related regional environmental entities in our risk assessments in order to stay updated on best-practice with regard to water-related regulations and standards, and so we can retain the applicable licenses and permits required to operate and use this critical resource responsibly, We interact often with the Missouri River Recovery Implementation Committee Advisory Group as well as the U.S. Army Corps of Engineers. We have achieved success of having no water-related regulation violations in 2019, which is how we measure success., We strive to keep a 100% compliance rate with strict environmental and regulatory standards for our operations because we value environmental stewardship, and strive for responsible use of water resources in order to operate responsibly in the regions where our customers live. For example, Ameren participates in the Missouri River Recovery Implementation Committee Advisory Group, led by the U.S. Army Corps of Engineers. The purpose of the Advisory Group is to study the Missouri River and its tributaries to determine actions required to properly manage the river for navigation, industrial, recreation, and water supply uses and recover federally listed species under the Endangered Species Act. We also interact with the U.S. Army Corps of Engineers on basin management issues at the Lake of the Ozarks. The water levels in the reservoir are heavily regulated, and signification communication and collaboration is required in order to manage water levels given that the volume of water allowed to pass

		through Osage Energy Center is correlated to what comes through the Truman Dam upstream, which is controlled by the Army Corps of Engineers.
Statutory special interest groups at a local level	Relevant, always included	We work hard to remain aware of external public opinions related to our operations and business. We engage with special interest groups on water-related issues as they can provide valuable perspective on limiting impacts to the environment, landowners and communities. We hold an annual stakeholder meeting associated with our Integrated Resource Plan (IRP) process, as well as regular public engagement sessions to address relevant and important topics to our stakeholders. Stakeholders, including NGOs, special interest groups, customers and local community members, are invited to attend and participate. In addition, we often meet with the public during new facility planning and construction, as well as for projects at existing facilities. We ensure we engage with groups and permitting requirements that have special interest in historic or natural resources.
Suppliers	Relevant, always included	Ameren includes suppliers in our water-related risk assessments because water is a critical resource for energy generation and it is also a regionally shared resource with which our suppliers might also affect and interact. It is therefore important to stay abreast of water-related topics with regard to our suppliers in order to remain aware of how water is used by our suppliers, understand best-practice, and retain necessary the licenses and permits required for us to continue to operate and use this precious resource responsibly. Ameren is a member of the Electric Utility Industry Sustainable Supply Chain Alliance (EUISSCA) which leads the industry in enhancing and promoting supply chain sustainable practices across utilities and suppliers. EUISSCA created an assessment for suppliers to disclose information regarding sustainability, including water-specific aspects, and to indicate actions they are willing to take to improve. In 2019, Ameren asked 100 suppliers to complete the assessment (representing 48% of annual spend). The assessment asks suppliers about their sustainability practices including those related to water i.e. total water withdrawals and discharge, or if a supplier implements water minimization practices. Suppliers can also indicate planned actions they will take to enhance sustainability or water-related practices. In 2019, 37% of Ameren suppliers asked to fill out the assessment responded. 27 suppliers indicated they will get a water inspection to identify reduction opportunities and 18 indicated they would install water conserving plumbing components.

		Participation in the survey is used internally to inform Ameren where suppliers' strengths and opportunities are in order to work with the Suppliers to promote best practices. Success is measured by the number of suppliers who respond and the number of suppliers that indicate they are pursuing more sustainable practices. Ameren looks forward to engaging with more Suppliers and increasing participation in the sustainability assessment, collaboration on sustainability topics, and transparency in the future.
Water utilities at a local level	Relevant, always included	Many of our natural gas combustion turbine energy centers, and other office facilities, rely on municipal water sources for our employees and operations. Therefore, as we buy municipal and local water, we interact with local water utilities and their needs are considered when it comes to water-related issues. We work with municipalities as they (1) regulate the spaces in which we work, and (2) can help us to decrease our water-related impact. For example, we are currently partnering with the St. Louis Metropolitan Sewer District to reconstruct the parking lot at our Development & Resource Center to better manage water runoff, enhancing the health of local streams.
Other stakeholder, please specify	Not considered	We do not include other stakeholders in our assessment.

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.

Ameren has a robust enterprise risk management (ERM) and governance programs to identify, evaluate and manage risks, into which water-related risk assessments are integrated. Our ERM program is a comprehensive, consistently applied management framework that is designed to ensure all forms of risks, including climate-related policy and legal, physical, reputational and financial risks, and opportunities are identified, reported an managed in an effective manner. Risk management is embedded into the business processes and key decision making at all levels of the Company.

Ameren evaluates water-related issues regularly as part of the overall business strategy and long-term financial planning. Water-related considerations are often driven by the Clean Water Act requirements and include thermal discharge considerations, aquatic organism entrainment and impingement, and effluent limitations. A dedicated Water Quality Group continually monitors regulatory changes and identifies business risks and opportunities, which are then regularly reported to multiple teams throughout Ameren. Ameren published a voluntary climate risk report and water resiliency assessment report which assessed climate change scenarios in order to determine long-term water availability and resiliency in our service territory and high-

risk portions of our supply chain. Compliance and climate-related water assessments help inform Ameren corporate-wide business strategy and the Ameren Missouri Integrated Resource Plan (IRP) which is issued every 3 years (updated annually) and has a 20 year planning horizon. During the annual planning cycle, costs and regulatory compliance are evaluated, and budget meetings are regularly held to allocate the resources necessary to meet or exceed water-related regulatory compliance and to inform long-term business operations viability.

In addition to regular inclusion of water-related risk in ERM procedures, we also recently conducted a special Water Resiliency Assessment that assessed the current and future availability of water resources and potential water stress in our regions of operation and key portions of our supply chain. The assessment used various tools to look at these regions under a variety of potential climate change assumptions. The report, available on the Ameren website, focuses on natural factors and how changes in global temperature and precipitation may influence water resources and water availability. For example, the WRI Aqueduct tool was used to identify areas of water stress in the regions included in the study.

A variety of management teams throughout our organization plan and execute our risk strategy, as well as coordinate with internal and external subject matter experts to inform the Board and company leadership of specific issues. These teams include, but are not limited to: environmental, innovation, legislative and regulatory affairs, corporate planning, engineering and generation, transmission, distribution and gas operations. In addition, our Board of Directors has extensive oversight over our strategy and execution and all aspects of risk, including key climate risks. In addition to the Board's direct oversight, the Audit and Risk Committee oversees Ameren’s ERM program, which includes strategic and operational risks, as well as the processes, guidelines and policies for identifying, assessing, monitoring, and mitigating such risks, which, as noted above, include climate-related risks. In 2018, Ameren created the Corporate Social Responsibility (CSR) department to lead efforts on ESG, climate and water-related issues and shareholder advocacy efforts. Additionally in 2018, Ameren created a CSR Executive Steering Committee to provide executive oversight of Ameren's enterprise-wide social responsibility efforts, including providing input to our CSR strategy. In 2019, Ameren further emphasized the importance of managing ESG and climate-related issues by establishing a Vice President-Sustainability & Electrification.

Furthermore, the Nuclear, Operations and Environmental Sustainability Committee oversees and reviews the Company’s operations, including safety, performance and compliance issues. Company representatives also engage various outside entities on water related matters such as state and federal regulatory/resource organizations including the Missouri Department of Natural Resources (MDNR), Missouri Department of Conservation (MDC), US Army Corps of Engineers (USACE), U.S. Fish and Wildlife Service (FWS), regional watershed groups (Missouri River), along with local and regional non-governmental organizations (NGOs). Decisions are made internally according to financial and regulatory factors, as well as in response to our engagement with the local community and our own goals to operate in an environmentally optimal way.

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?

Yes, both in direct operations and the rest of our value chain

W4.1a

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

Ameren has robust enterprise risk management (ERM) and governance programs to identify, evaluate and manage risks, into which water-related risk assessments are integrated. Our ERM program is a comprehensive, consistently applied management framework that is designed to ensure all forms of risks, including climate-related policy and legal, physical, reputational and financial risks, and opportunities are identified, reported an managed in an effective manner. We assess climate-related risks, including risks related to regulatory changes, changes in customer behavior, reputation, and weather. Short (from 0 to 5 years), medium (from 5 to 10 years), and long-term (from 10 to 30 years and beyond) risks are part of the identification, assessment, and management processes. The Audit and Risk Committee (ARC) of Ameren's Board of Directors oversees the ERM program. The goals of the ERM program are to enhance the ERM structure, further enable cross segment risk portfolio management, create solid ties to emergent risks, and incorporate detailed analysis of topical areas including environmental. Ameren’s ARC meets at least five times per year.

Potential Climate and water-related risks and opportunities are identified within certain functions of the Company, through analysis, research and discussions with and among our different business segments, including Corporate Social Responsibility, Ameren Missouri Power Operations, Energy Efficiency, Innovation & Corporate Strategy, and others. Ameren's process for identifying risks and opportunities associated with potential water-related issues is designed to allow Ameren to make prudent decisions, while meeting customers’ energy needs in a safe, reliable, efficient and environmentally responsible manner.

Definition of Substantive financial impact: Ameren defines "substantive financial impacts" to include potential policy, physical or financial risks/opportunities that could have a financial impact of greater than $1 million. Once a potential risk/opportunity is identified that could have a financial impact greater than $1M or other qualitative impacts for the company or an asset, a subject matter expert studies it. That evaluation is designed to be robust and includes regulatory, physical, financial and reputational risks and opportunities. This process helps senior management identify risks/opportunities, mitigation strategies and potential financial implications. Recommendations are communicated to the appropriate functions, business segments and the Ameren Executive Leadership Team as appropriate.

Potential impacts exist in both direct operations as well as the rest of our value chain. For example, certain climate assumptions indicate present and continuing patterns of increased variability and severity of weather-related events. Therefore, energy transmission and distribution systems may be potentially vulnerable to being affected by regional flooding and severe extreme weather. Should severe weather occur, potential damage to ongoing operations and assets could cost from several hundred thousand dollars in mitigation costs to several million dollars i.e. having substantive effect. In order to mitigate these effects and make the energy generation and delivery infrastructures more resilient to the physical risks of extreme weather events and, Ameren is making certain asset enhancements and improvements, commonly known as “system hardening". This is intended to avoid potential impacts and damages that may otherwise occur. Examples of how we are implementing system hardening measures include burying lines most susceptible to weather-related damage, including those in forested areas and crossing over interstate and multi-lane state highways. For overhead line assets, we increasingly use composite material poles and cross-arms, line post insulators, 360-degree pole guying, and mechanical line dampers. All are effective in neutralizing the otherwise destructive effects of wind and moisture. At the same time, Ameren deploys an increasingly comprehensive strategy to ensure the reliability and stability of the grid, from the energy center to the customer. On top of system hardening, this strategy includes three additional distinct and complementary levels of planning and execution – emergency planning, situational awareness and emergency response – in support of asset protection, system reliability and resiliency. The result of these efforts reduce the risk of experiencing substantive impact of extreme weather events.

W4.1b

(W4.1b) What is the total number of facilities exposed to water risks with the potential to have a substantive financial or strategic impact on your business, and what proportion of your company-wide facilities does this represent?

	Total number of facilities exposed to water risk	% company-wide facilities this represents	Comment
Row 1	8	Less than 1%	Ameren and its subsidiaries own over 800 separate facilities including generation centers, administrative and business buildings, substations, and warehouses. The scope of this disclosure is limited to the sixteen energy generation facilities (that use water for generation). Of these, only eight have the potential to have substantive financial or strategic impacts and include our four coal-fired, one nuclear, and three hydroelectric energy centers. When compared to all 800 facilities considered part of Ameren operations, these eight facilities represent approximately 1% of Ameren's total facilities. These eight energy centers and accounted for 99% of total gross generation in 2019, withdrew 99.9% of the total water withdrawn and discharge about 99.9% of the water

			they withdraw back to the environment. These energy centers rely heavily on large volumes of water for operations and may be exposed to water risk due to flooding or insufficient flows. However, our Water Resilience Assessment concluded that the regions in which we operate have low risk of future water scarcity within our direct operations through 2030. The two hydroelectric dams and one hydroelectric pump storage may also be exposed to water risk due to insufficient flows. However, gross hydroelectric generation is relatively low (approximately 5.4%) of total net generation from 2019. In addition, our recently completed Water Resilience Assessment concluded that the major river basins (i.e. the Missouri and the Mississippi) in our operating regions are expected to have ample water supply into the long term. The greater risk is extreme weather and flood events as opposed to drought in these regions. The combustion turbines are not exposed to substantive water-related risk due to their very small reliance on water resources in comparison to the larger energy centers.

W4.1c

(W4.1c) By river basin, what is the number and proportion of facilities exposed to water risks that could have a substantive financial or strategic impact on your business, and what is the potential business impact associated with those facilities?

Country/Area & River basin

United States of America

Mississippi River

Number of facilities exposed to water risk

8

% company-wide facilities this represents

Less than 1%

% company's annual electricity generation that could be affected by these facilities

76-99

% company's total global revenue that could be affected

Unknown

Comment

Ameren does not selectively disclose revenues from energy centers. Eight energy centers, all located within the Mississippi River Basin, are exposed to substantive water related risk. These include four fossil fuel fired, two hydroelectric dams, a pumped storage facility, and one nuclear energy center. Each of these energy centers can be substantively affected by flooding or insufficient flows. The four coal-fired facilities comprised approximately 69% of 2019 net generation, making up the largest bulk of gross generation. In comparison, the hydroelectrically dams and pump storage made up a small portion of net generation capacity in 2019 (approximately 5.4%).

W4.2

(W4.2) Provide details of identified risks in your direct operations with the potential to have a substantive financial or strategic impact on your business, and your response to those risks.

Country/Area & River basin

United States of America
Mississippi River

Type of risk & Primary risk driver

Physical
Dependency on water intensive energy sources

Primary potential impact

Closure of operations

Company-specific description

Our largest coal-fired and hydroelectric energy centers withdraw and discharge about eight millionmega liters of surface water per year from the Mississippi and Missouri river basins. These basins are large, covering broad geographic areas, and flows are highly managed (using numerous dams and locks) and regulated by the US Army Corps of Engineers (USACE). Primary factors that may influence the availability of these water resources include USACE management of flows, climate (temperature and precipitation), and consumption (by upstream users). A substantial uncertainty is how changes in temperature and precipitation, resulting from climate change, may influence water resources and availability. There is uncertain risk that future flows might be insufficient to meet our cooling water demand. If energy centers need to be closed prior to the end of their useful lives due to a lack of available water, we may experience issues related to stranded costs that may require regulatory approval for cost recovery. However, Ameren conducted and published a Water Resilience Assessment that investigated future projections of water stress and scarcity in regions of our direct operations. The assessment utilized a variety of tools to look at various climate scenarios through 2030, including the World Resources Institute Aqueduct Water Risk Atlas Tool. The results of the assessment show water stress is projected to be near normal for the Mississippi River basin (through 2030). Therefore there is low risk that

our operations will be disrupted due to water availability. However, we understand much of our energy generation relies heavily on water intensive energy sources, and our long term strategy includes a responsible transition away from these generation technologies. We are investing in 700MW of wind and 100MW of solar generation which will reduce reliance on water-intensive generation. Ameren Missouri's next Integrated Resource Plan will be filed in September of 2020.

Timeframe

More than 6 years

Magnitude of potential impact

Medium-high

Likelihood

Very unlikely

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure - minimum (currency)

Potential financial impact figure - maximum (currency)

Explanation of financial impact

Ameren operations are located in the water abundant Mississippi and Missouri river watersheds. Ameren completed a Water Resilience Assessment that concluded that the risk of greatly reduced water availability is very low for the foreseeable future. The amount of financial impact cannot be precisely determined due to the high level of uncertainty and variability in cost in the extent and duration of any possible disruptions.

Primary response to risk

Improve monitoring

Description of response

Ameren monitors river basin conditions, and performs periodic water resiliency and risk assessments, including the consideration of climate change. We expect to coordinate these updates with the Ameren Missouri Integrated Resource Plan (IRP) triennial filing. River levels are monitored daily at major energy centers.

Cost of response

50,000

Explanation of cost of response

Approximate cost is expected to be in the range of $50,000 per year, including both the embedded cost of river level monitoring and periodic studies.

Country/Area & River basin

United States of America

Mississippi River

Type of risk & Primary risk driver

Regulatory

Regulation of discharge quality/volumes

Primary potential impact

Increased operating costs

Company-specific description

Section 316(a) of the US Clean Water Act requires limitations on thermal discharges from industrial sources, including power plants. Cooling water discharges at Ameren's energy centers are regulated by the US Environmental Protection Agency and the Missouri Department of Natural Resources, through the NPDES (National Pollutant Discharge Elimination System) permit program. As required by the current Labadie Energy Center permit, extensive thermal studies, monitoring, and modeling are being conducted at that energy center. Based on the results to date, we believe we are in full compliance with Section 316(a). In the event of changing thermal conditions, changes in operating procedures might be necessary to address thermal issues, avoiding the high-cost alternative of installing cooling towers. We do not believe there are thermal issues at our other coal-fired energy centers that would require cooling towers. Nonetheless, if one of our energy centers would need to reduce or cease operations or install capital intensive modifications, stranded cost issues could potentially arise for shareholders and require regulatory approval for cost recovery.

Timeframe

More than 6 years

Magnitude of potential impact

Medium-high

Likelihood

Unknown

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure - minimum (currency)

Potential financial impact figure - maximum (currency)

Explanation of financial impact

The actual amount of expenditures to comply with these environmental regulations may vary substantially because of uncertainty as to whether EPA will revise regulatory obligations, and which will impact our compliance strategy and ultimate cost of compliance, among other things.

Primary response to risk

Improve pollution abatement and control measures

Description of response

In the event that ongoing studies indicate that the Labadie Energy Center may not fully meet compliance requirements in the future, we expect operating procedures would be implemented to address thermal issues and thereby avoid requirements to install cooling towers at the Labadie Energy Center.

Cost of response

0

Explanation of cost of response

Unknown until a regulatory response is warranted. Therefore it is very difficult to provide a single number for cost of response.

Country/Area & River basin

United States of America
Mississippi River

Type of risk & Primary risk driver

Regulatory
Regulatory uncertainty

Primary potential impact

Increased cost of capital

Company-specific description

Section 316(b) of the US Clean Water Act (CWA) establishes criteria to protect fish and other aquatic organisms from detrimental impacts associated with large water intake structures. At power plants (including Ameren's energy centers), aquatic organisms can be impinged or entrained within cooling water intake structures, piping and condenser systems. The US Environmental Protection Agency issued revised Section 316(b) regulations in 2014, requiring extensive studies for review by the Missouri Department of Natural Resources and other agencies over the next 4 to 6 years. These include assessments of various control technologies, up to and including cooling tower retrofits. Outcomes of CWA Section 316(b) studies might result in regulatory agencies requiring cooling system modifications or replacement technologies at our Labadie, Rush Island, and Sioux energy centers. Ameren believes the installation of fine mesh screens may be required (upon completion of these studies and review by regulatory agencies) at these three energy centers. {See Ameren's 2017 IRP for details:

https://www.ameren.com/missouri/company/environment-and-sustainability/integrated-resource-plan.

Timeframe

4-6 years

Magnitude of potential impact

Medium-high

Likelihood

Likely

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

49,000,000

Potential financial impact figure - minimum (currency)

Potential financial impact figure - maximum (currency)

Explanation of financial impact

Costs for fine mesh screen retrofits at three Ameren Energy Centers were estimated in Table 5.3 of Chapter 5, Environmental Compliance, (Environmental Mitigation Costs) of Ameren Missouri's 2017 Integrated Resource Plan (as referenced above). The Integrated Resource Plan is available at: https://www.ameren.com/missouri/company/environment-and-sustainability/integrated-resource-plan

Primary response to risk

Improve pollution abatement and control measures

Description of response

Upon completion of the current Section 316(b) studies, we will begin dialogue with the regulatory agencies, and if warranted, begin design, budgeting and procurement of the required technologies.

Cost of response

49,000,000

Explanation of cost of response

The approximate cost of fitting three energy centers with fine mesh screens is estimated to be $49 million dollars, as reported in table 5.3 of Ameren Missouri's 2017 IRP.

Country/Area & River basin

United States of America

Mississippi River

Type of risk & Primary risk driver

Physical

Flooding

Primary potential impact

Increased operating costs

Company-specific description

Impacts from flooding are highly dependent on the facility and location, as well as severity of the flooding event. Costs could range from several hundred thousand dollars in mitigation costs to costing several million dollars. The range of response could require slight temporary adjustment in operations or could lead to total disruption of operations and/or the temporary shutting down of operations. Ameren has robust crisis management strategies at both the operations and corporate levels. We use advance weather systems to monitor and prepare for the severity of impending weather events and mobilize crews and resources to respond effectively. We have published a climate risk report titled: Building a Cleaner Energy Future that outlined our potential climate and water-related risks and expectations. Following past flooding events, Ameren implemented more vigilant surveillance and monitoring of local river stages following extreme rainfall or drought conditions. We have also constructed flood walls, upgraded berms, implemented storm water capture and control efforts, and relocated equipment within substation sites susceptible to flooding.

Timeframe

Current up to one year

Magnitude of potential impact

Medium-high

Likelihood

Very likely

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure - minimum (currency)

Potential financial impact figure - maximum (currency)

Explanation of financial impact

Severe weather can lead to damages from rising water, lightning and high winds. The impacts of this are highly dependent on the location and type of facility. These impacts

can lead to temporarily increased operation and maintenance costs, disruption in personnel transport, or disruptions in plant operations.

Primary response to risk

Develop flood emergency plans

Description of response

Before any potential flooding event, our crisis management teams are constantly monitoring weather patterns, developing crisis response protocols, and predicting impacts so we can mobilize our resources to best respond during an event. Following recent extreme weather events, we have implemented "system hardening" by constructing flood walls, upgrading berms, implementing storm water capture and control efforts, and relocating equipment within substation sites susceptible to flooding.

Cost of response

0

Explanation of cost of response

Impacts from severe weather events and flooding are highly dependent on the facility and location, as well as severity of the flooding event. Costs could range from several hundred thousand dollars in mitigation costs to several million dollars. The range of response could require slight temporary adjustment in operations or infrastructure maintenance or could lead to total disruption of operations and/or the temporary shutting down of operations. Ameren has robust crisis management strategies at both the operations and corporate levels. We use advance weather systems to monitor and prepare for the severity of impending weather events and mobilize crews and resources to respond effectively. We have published a climate risk report titled Building a Cleaner Energy Future that outlined our long-term risks and expectations.

W4.2a

(W4.2a) Provide details of risks identified within your value chain (beyond direct operations) with the potential to have a substantive financial or strategic impact on your business, and your response to those risks.

Country/Area & River basin

United States of America
Mississippi River

Stage of value chain

Supply chain

Type of risk & Primary risk driver

Physical
Increased water stress

Primary potential impact

Supply chain disruption

Company-specific description

We studied the current and future resilience of water resources to understand potential impact on our service area and supply chain, and reported them in our Water Resiliency Assessment report. This voluntary report shows for the time period around 2030, water stress is projected to be near normal for most of the Midwest (our regions of direct operations) but could increase in the Powder River Basin (PRB) in Wyoming, a key portion of our supply chain. A significant amount of our coal supply is from the PRB. In addition, barges are sometimes used in our upstream supply chain to transport coal. We continually monitor our supply chain and are not aware of any water related risks that cannot be managed. We expect reduced reliance on coal resources in future as our Meramec coal-fired Energy Center is scheduled to retire in 2022, thereby reducing the amount coal coming from the PRB. Risk of potentially increasing risk of water scarcity in the PRB will be monitored and potential impacts to coal supply will be assessed on a periodic basis.

Timeframe

More than 6 years

Magnitude of potential impact

Low

Likelihood

Unlikely

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure - minimum (currency)

Potential financial impact figure - maximum (currency)

Explanation of financial impact

Key portions of Ameren's supply chain is located in the Powder River Basin in Wyoming. Our Water Resiliency Assessment has identified that water stress is likely to increase in this area by 2030. The amount of financial impact cannot be precisely determined due to the high level of uncertainty and variability in cost in the extent and duration of any possible disruptions. However, we continually monitor our supply chain and are not aware of any water related risks that cannot be managed. We expect reduced reliance on coal resources in future as our Meramec coal-fired Energy Center is scheduled to close in 2022, reducing the amount coal coming from the PRB.

Primary response to risk

Direct operations
Increase investment in new technology

Description of response

Ameren Missouri's 2017 Integrated Resource Plan (IRP) outlines plans to significantly increase our renewable energy portfolio. We are investing in 700 MW of wind generation. We expect a 400 MW project and the majority of the 300 MW project to be placed in-service by the end of 2020. Ameren Missouri expects a portion of the 300 MW project will be placed in-service in the first quarter of 2021. We also expect to invest in 100 MW of solar generation by 2027. The 2017 IRP also includes the planned retirement of more than half of Ameren Missouri's coal-fired generation capacity by 2036, starting with the retirement of the Meramec Energy Center by the end of 2022. Ameren Missouri expects to file its next integrated resource plan in September 2020. These investments in renewable energy generation technologies coupled with the retirement of coal-fired energy centers will reduce reliance on coal coming from the PRB in the future.

Cost of response

0

Explanation of cost of response

The amount of financial impact cannot be precisely determined due to the high level of uncertainty and variability in cost in the extent and duration of any possible disruptions.

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

Resilience

Primary water-related opportunity

Increased resilience to impacts of climate change

Company-specific description & strategy to realize opportunity

Ameren designs and incorporates physically robust features into the electric grid in anticipation of weather-related or other disruptive events that could be impacted by climate change. Following recent flooding events, we constructed flood walls, upgraded berms, implemented storm water capture and control efforts, and relocated equipment

within substation sites susceptible to flooding. To increase resiliency of the electric grid, we bury lines most susceptible to weather-related damage, including those in heavily forested areas and crossing over interstate and multi-lane state highways. For overhead line assets, we increasingly use composite material poles and cross-arms, line post insulators, 360-degree pole guying, and mechanical line dampers. These resiliency measures are part of our strategy as they decrease the risk of experiencing extended outages at the result of increasingly severe weather that is projected to increasingly occur as an impact of climate change. These resiliency measure are considered to be best-practices and effective in neutralizing the otherwise destructive effects of wind and moisture.

Estimated timeframe for realization

Current - up to 1 year

Magnitude of potential financial impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

4,400,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact

Over the next five years (2020-2024) Ameren plans to invest over $3.2 billion in transmission system improvements and $1.2 billion for 700 MW of wind generation to ensure that we will be able to provide reliable and safe service and serve customers better. This number was calculated from expected build-transfer agreements.

Type of opportunity

Efficiency

Primary water-related opportunity

Improved water efficiency in operations

Company-specific description & strategy to realize opportunity

As of 2019, Ameren permanently discontinued wet transport of coal ash at 8 of its 12 coal combustion units and have transitioned all units scheduled to operate past 2022 to dry ash handling. The four units that have not been transitioned are located at the Meramec Energy Center, and are scheduled to retire in 2022. The dry handing of CCR will use significantly lower volumes of water, enhancing the efficiency of water use and further reducing the risk of surface and groundwater contamination in future. Success in

CCR management is measured by our compliance rate with strict regulations. We strive for 100% compliance with relevant regulations. In addition, the wastewater treatment systems at our three coal-fired energy centers are being upgraded and will use water more efficiently.

Estimated timeframe for realization

Current - up to 1 year

Magnitude of potential financial impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

340,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact

On November 3, 2015, the EPA issued a revised rulemaking for steam electric power plant discharges (the Steam Electric Effluent Guidelines Rule). This rule prohibits discharges of ash transport water. As such, Ameren Missouri will have to construct new or augmented fly ash handling systems and new bottom ash handling systems. Ameren Missouri is also constructing new wastewater treatment systems to manage discharges from various power plant systems such as demineralizer regenerations, storm water, and other process wastewater. In 2015, Ameren Missouri began to design waste water treatment systems and conversion to dry ash handling for the Labadie, Rush Island, and Sioux energy centers. Costs for these retrofits at these three Ameren energy centers were estimated in Ameren Missouri's 2017 Integrated Resource Plan (IRP) and recently updated to $370 million based on the costs for waste water treatment plant and dry ash conversion at Labadie, Sioux, and Rush Island. The Integrated Resource Plan is available at: https://www.ameren.com/missouri/company/environment-and-sustainability/integrated-resource-plan.

W5. Facility-level water accounting

W5.1

(W5.1) For each facility referenced in W4.1c, provide coordinates, water accounting data, and a comparison with the previous reporting year.

Facility reference number

Facility 1

Facility name (optional)

Labadie Energy Center

Country/Area & River basin

United States of America
Mississippi River

Latitude

38.56419

Longitude

-90.83728

Located in area with water stress

No

Primary power generation source for your electricity generation at this facility

Coal - hard

Total water withdrawals at this facility (megaliters/year)

1,726,448

Comparison of total withdrawals with previous reporting year

About the same

Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes

1,721,716

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

4,732

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

0

Total water discharges at this facility (megaliters/year)

1,717,648

Comparison of total discharges with previous reporting year

About the same

Discharges to fresh surface water

1,717,648

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0

Total water consumption at this facility (megaliters/year)

4,068

Comparison of total consumption with previous reporting year

About the same

Please explain

"About the same" is used to denote year to year changes being within 0%-10% compared to the previous year. Labadie generated about the same amount of energy in 2019 as compared to 2018 and therefore used about the same volumes of water.

Facility reference number

Facility 2

Facility name (optional)

Sioux Energy Center

Country/Area & River basin

United States of America
Mississippi River

Latitude

38.914722

Longitude

-90.29

Located in area with water stress

No

Primary power generation source for your electricity generation at this facility

Coal - hard

Total water withdrawals at this facility (megaliters/year)

845,339

Comparison of total withdrawals with previous reporting year

About the same

Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes

845,339

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

0

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

0

Total water discharges at this facility (megaliters/year)

843,515

Comparison of total discharges with previous reporting year

About the same

Discharges to fresh surface water

0

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0

Total water consumption at this facility (megaliters/year)

1,824

Comparison of total consumption with previous reporting year

Lower

Please explain

"About the same" is used to denote year to year changes being within 0%-10% compared to the previous year.
"Lower" is used to denote a decrease of 10%-20% compared to the previous year.
Consumption was lower in 2019 due to decreased generation on account of operational

needs and generation scheduling. Water consumption is estimated monthly for all of our generation sites included in the scope and is calculated based on known generation consumption factors per MWh generated.

Facility reference number

Facility 3

Facility name (optional)

Rush Island Energy Center

Country/Area & River basin

United States of America
Mississippi River

Latitude

38.108722

Longitude

-90.258056

Located in area with water stress

No

Primary power generation source for your electricity generation at this facility

Coal - hard

Total water withdrawals at this facility (megaliters/year)

1,412,633

Comparison of total withdrawals with previous reporting year

Higher

Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes

1,412,597

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

36

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

0

Total water discharges at this facility (megaliters/year)

1,411,107

Comparison of total discharges with previous reporting year

Higher

Discharges to fresh surface water

1,411,107

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0

Total water consumption at this facility (megaliters/year)

1,490

Comparison of total consumption with previous reporting year

Much lower

Please explain

"higher" is used to denote an increase of 10%-20% compared to the previous year. "Much lower" is used to denote year to year changes greater than 20% compared to the previous year. Consumption was much lower due to generation scheduling and operation needs.

Facility reference number

Facility 4

Facility name (optional)

Meramec Energy Center

Country/Area & River basin

United States of America
Mississippi River

Latitude

38.401348

Longitude

-90.334862

Located in area with water stress

No

Primary power generation source for your electricity generation at this facility

Coal - hard

Total water withdrawals at this facility (megaliters/year)

289,677

Comparison of total withdrawals with previous reporting year

Much lower

Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes

289,677

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

0

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

0

Total water discharges at this facility (megaliters/year)

289,543

Comparison of total discharges with previous reporting year

Much lower

Discharges to fresh surface water

289,543

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0

Total water consumption at this facility (megaliters/year)

134

Comparison of total consumption with previous reporting year

Much lower

Please explain

"Much lower" is used to denote year to year changes greater than 20% compared to the previous year.
Meramec Energy Center was in operation much less in 2019 than in 2018. The facility is scheduled to be retired in 2022.

Facility reference number

Facility 5

Facility name (optional)

Callaway Energy Center

Country/Area & River basin

United States of America
Mississippi River

Latitude

38.761666

Longitude

-91.78

Located in area with water stress

No

Primary power generation source for your electricity generation at this facility

Nuclear

Total water withdrawals at this facility (megaliters/year)

29,695

Comparison of total withdrawals with previous reporting year

Lower

Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes

29,372

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

323

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

0

Total water discharges at this facility (megaliters/year)

6,241

Comparison of total discharges with previous reporting year

Lower

Discharges to fresh surface water

6,241

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0

Total water consumption at this facility (megaliters/year)

23,454

Comparison of total consumption with previous reporting year

Lower

Please explain

"Lower" is used to denote a decrease of 10%-20% compared to the previous year.

Facility reference number

Facility 6

Facility name (optional)

Keokuk Energy Center

Country/Area & River basin

United States of America
Mississippi River

Latitude

40.395833

Longitude

-91.374166

Located in area with water stress

No

Primary power generation source for your electricity generation at this facility

Hydropower

Total water withdrawals at this facility (megaliters/year)

45,298,502

Comparison of total withdrawals with previous reporting year

About the same

Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes

45,298,502

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

0

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

0

Total water discharges at this facility (megaliters/year)

45,298,502

Comparison of total discharges with previous reporting year

About the same

Discharges to fresh surface water

45,298,502

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0

Total water consumption at this facility (megaliters/year)

0

Comparison of total consumption with previous reporting year

About the same

Please explain

"About the same" is used to denote year to year changes being within 0%-10% compared to the previous year.

Facility reference number

Facility 7

Facility name (optional)

Osage Energy Center

Country/Area & River basin

United States of America
Mississippi River

Latitude

38.2045

Longitude

-92.623

Located in area with water stress

No

Primary power generation source for your electricity generation at this facility

Hydropower

Total water withdrawals at this facility (megaliters/year)

20,964,597

Comparison of total withdrawals with previous reporting year

Much higher

Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes

20,964,597

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

0

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

0

Total water discharges at this facility (megaliters/year)

20,964,597

Comparison of total discharges with previous reporting year

Much higher

Discharges to fresh surface water

20,964,597

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0

Total water consumption at this facility (megaliters/year)

0

Comparison of total consumption with previous reporting year

About the same

Please explain

"About the same" is used to denote year to year changes being within 0%-10% compared to the previous year.
"Much higher" is used to denote year to year changes more than 20% higher than the previous year.
Osage generated almost three times as many MWh compared to the previous year, which used increased volumes of water.

Facility reference number

Facility 8

Facility name (optional)

Taum Sauk Energy Center

Country/Area & River basin

United States of America
Mississippi River

Latitude

37.535555

Longitude

-90.818055

Located in area with water stress

No

Primary power generation source for your electricity generation at this facility

Hydropower

Total water withdrawals at this facility (megaliters/year)

0

Comparison of total withdrawals with previous reporting year

About the same

Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes

0

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

0

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

0

Total water discharges at this facility (megaliters/year)

0

Comparison of total discharges with previous reporting year

About the same

Discharges to fresh surface water

0

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0

Total water consumption at this facility (megaliters/year)

0

Comparison of total consumption with previous reporting year

About the same

Please explain

"About the same" is used to denote year to year changes within 0-10% compared to the previous year. Taum Sauk Energy Center is a pump storage facility that pumps water between an upper and lower reservoir in order to generate electricity. The total volume of the system is 5,416 megaliters. This is considered a closed loop system with no loss, no additional withdrawal, discharge or consumption, and 100% reuse of water.

W5.1a

(W5.1a) For the facilities referenced in W5.1, what proportion of water accounting data has been externally verified?

Water withdrawals – total volumes

% verified

Not verified

Water withdrawals – volume by source

% verified

Not verified

Water withdrawals – quality

% verified

Not verified

Water discharges – total volumes

% verified

Not verified

Water discharges – volume by destination

% verified

Not verified

Water discharges – volume by treatment method

% verified

Not verified

Water discharge quality – quality by standard effluent parameters

% verified

Not verified

Water discharge quality – temperature

% verified

Not verified

Water consumption – total volume

% verified

Not verified

Water recycled/reused

% verified

Not verified

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 impact on water Company water targets and goals Commitments beyond regulatory compliance	Ameren's water policy states: "Ameren is committed to protecting natural resources, including the preservation of water. Though our facilities are geographically situated in an area of ample water supply, operating divisions within Ameren take into consideration the impact of our operations on both water quality and use. We have made conscious decisions to conserve water in the design and modifications of our facilities, and plan to conserve water further in the future". • In our water policy, we identify that our business impacts affect water quality and use, and the need to conserve water. Of the large volumes of surface water we use for cooling, 99% of which is discharged again to the source and is constantly monitored to comply with thermal and other pollution limits. • We have specific goals to meet our conscious decision to conserve water by reducing the use of surface water by 11 billion gallons a year by converting to dry ash handling systems at the fossil-fueled energy centers. In addition, we are making

			significant investments in upgrading wastewater treatment systems. These goals go beyond regulatory requirements. In transitioning to cleaner generation and we expect to close a fossil-fuel fired energy center in 2022 (including increased renewable generation by adding at least 800 MW of wind and solar by 2027) and expect to further reducing our need for surface water in operations. Ameren also conducted a voluntary Water Resilience Assessment to inform our understanding and knowledge of water stress to verify our understanding of water availability and inform decision making for design of our facilities and operations for enhanced water conservation. This report is available at Ameren.com/sustainability. The planned additions of renewable generation as well as increased investments in water efficiency measures and technologies work towards our goal to conserve water further in the future.

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
Chief Executive Officer (CEO)	Ameren's President and CEO has the highest level of direct responsibility for water-related issues within our organization. The CEO considers water-related issues on an ongoing basis as part of his role in overseeing members of the company's senior leadership who are responsible for the company's management and planning for water-related issues, including the impacts of climate change on the company's water resources and compliance with environmental regulations. These matters are discussed with the CEO in individual meetings, meetings of the Company's Executive Leadership Team, and as part of the process of preparing materials for presentation to the Company's Board of Directors and the NOESC, where management regularly presents information regarding the Company's generation strategy, operational matters that impact water usage, and climate-related disclosures.

W6.2b

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

	Frequency that water-related	Governance mechanisms into	Please explain

	issues are a scheduled agenda item	which water-related issues are integrated	
Row 1	Scheduled - some meetings	Monitoring implementation and performance Overseeing acquisitions and divestiture Overseeing major capital expenditures Reviewing and guiding annual budgets Reviewing and guiding business plans Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding strategy Reviewing and guiding corporate responsibility strategy	We are focused on ensuring that our corporate governance and enterprise risk management practices protect and enhance long-term shareholder value and reflect our environmental stewardship, including water stewardship. In addition to receiving regular reports from each board committee that oversees the various elements impacted by environmental and water-related matters, the full Board of Directors holds an annual strategy session to consider key risks and opportunities for the company, including those posed by climate change and water-related issues. The Board hosts presentations by outside experts who provide perspectives and updates on climate change and related risks and opportunities. • The Audit and Risk Committee of the Board oversees the Company's overall enterprise risk management program, which includes water-related issues, as water availability is a key component of power generation at our coal-fired, nuclear, and hydroelectric energy centers. • The Nuclear, Operations and Environmental Sustainability Committee oversees and reviews our operations, including safety, performance, environmental and compliance issues, and risks, policies and performance related to environmental sustainability matters, including those related to climate change wand water resource management. • The Finance Committee oversees and approves major capital expenditures relating to environmental compliance measures, such as programs to comply with coal combustion residual management plans and the acquisition of renewable generation facilities as outlined in our 2017 Integrated Resource Plan. This includes oversight of projects related to water-related initiatives, such as the construction of flood walls, upgraded berms, and storm water capture and control efforts. An example of how climate-related issues are monitored at Ameren is provided through the development of the Ameren Climate Risk Report. In

			March 2019, we issued a climate risk report that includes analysis of the impact of technological and policy changes that are consistent with limiting global warming. The report was prepared by subject matter experts across the Company and was overseen by our Executive Leadership Team. The report was reviewed by the Board, as well as the Nuclear and Operations Committee and Nominating and Corporate Governance Committee.

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 Executive Officer (CEO)

Responsibility

Both assessing and managing water-related risks and opportunities

Frequency of reporting to the board on water-related issues

Quarterly

Please explain

Ameren evaluates water-related issues regularly as part of overall business strategy and long-term financial planning. Water-related considerations are driven by our commitment to environmental stewardship and compliance regulations. A dedicated Water Quality Group continually monitors regulatory changes and identifies business risks/opportunities, which are then regularly reported to multiple teams throughout Ameren. This information along with reports (i.e. our Climate Risk Report and Water Resiliency Assessment) assessing climate change scenarios and long-term water availability and resiliency, help inform our overall business strategy, including Ameren Missouri's Integrated Resource Plan (IRP). The Ameren CEO regularly receives and reviews information on water-related matters from internal and external subject matter experts. The CEO and other levels of executive leadership review and provide input on the IRP.

W6.4

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

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

W6.5

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

Yes, direct engagement with policy makers
Yes, trade associations
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?

Ameren Missouri Environmental Services and Ameren Corporate Environmental staff jointly develop plans and engage with internal and external stakeholders, including state and federal regulatory agencies, advisory groups such as the Missouri River Recovery Implementation Committee, the Missouri Water Protection Forum, and the Illinois Environmental Regulatory Group, and the public. Ameren's government affairs groups ensure consistency with water policy and regulatory requirements. These Ameren departments are responsible for processes and commitments that ensure coordination with and consistent adherence to Ameren's water policy and to implement corrective actions when inconsistencies are found.

W6.6

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

Yes (you may attach the report - this is optional)
2019_AEE_Annual_Report_Final.pdf

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	16-20	We are committed to operating in a sustainable manner by carefully balancing our key responsibilities to our customers, co-workers, shareholders, and the environment. Ameren evaluates water-related issues

			regularly as part of the overall business strategy and long-term financial planning. Water-related considerations are driven by the Clean Water Act requirements and include thermal discharge considerations, aquatic organism entrainment and impingement, and effluent limitations. A Water Quality Group continually monitors regulatory changes and identifies business risks and opportunities, which are then regularly reported to multiple teams throughout Ameren. Ameren published a voluntary Climate Risk Report and Water Resiliency Assessment report which assessed climate change scenarios in order to determine long-term water availability and resiliency in our service territory and high-risk portions of our supply chain. Both compliance and climate-related water assessments help inform Ameren Missouri's Integrated Resource Plan (IRP) which is issued every 3 years and (updated annually) has a 20 year planning horizon (which is why 16-20 years was selected.) During the annual planning cycle, costs and regulatory compliance are evaluated, and budget meetings are held regularly to allocate the resources necessary to remain in compliance with water-related regulations and to inform long-term business operations viability. The IRP is approved by the Ameren Missouri Board of Directors.
Strategy for achieving long-term objectives	Yes, water-related issues are integrated	16-20	Our current and future water-related strategy is informed by ongoing regulatory compliance requirements and climate-related assessments, and is integrated into our overall business strategy and Ameren Missouri Integrated Resource Plan (IRP). Water-related risks and opportunities are largely driven by regulatory compliance, resilience to future climactic events, and our carbon emission targets which support the expansion of our renewable portfolio. Water-related action includes the upgrading of wastewater treatment facilities, ash pond closings, and groundwater monitoring system upgrades at our coal-fired energy centers. In addition, we have established goals to reduce water consumption by approximately 11 billion gallons annually by converting to dry handling of coal combustion residuals. The expansion of renewable energy capacity will include the installation of 700 MW of wind generation and 100 MW of solar generation 2027, reducing reliance on water-intensive generation. To enhance resilience to future extreme water-related

			events, Ameren is continuing to investigate system hardening measures that includes, construction of flood walls, berm upgrades, and the implementation of storm water capture and control efforts around at-risk facilities. These implementations were integrated into Ameren Missouri's 2017 IRP which incorporates a 20 year forecasting horizon (which is why 16-20 years was chosen).
Financial planning	Yes, water-related issues are integrated	16-20	As part of our commitment to environmental stewardship and regulatory compliance for the long-term planning horizon, Ameren's budgeting process incorporates responses to compliance and climate related risks and opportunities. The largest financial resources allocated to water-related risks are the closing of ash ponds at all four coal-fired energy centers, as well as the conversion to dry-ash handling and the upgrading of wastewater treatment plants. Projects to accomplish these modifications are in progress are expected to be completed by 2023. Ongoing groundwater monitoring and remediation programs have also been included. The planned retirement of all coal-fired energy centers will reduce long-term reliance on water-intensive generation and associated water-related financial risks. Decreased generation from water-intensive fossil fuelled energy centers over the next 5-10 years are expected to be offset by investments into the expansion of our renewable energy portfolio and multiple energy efficiency program offerings. The Water Resiliency Assessment conducted in 2018 included water-related climate scenarios and indicated while future water-scarcity is a low risk in our areas of operations, increasing intensity of weather and flood events may occur. Therefore, investments in system hardening are being made through the construction of flood walls, berm upgrades, and the implementation of storm water capture and control efforts around at-risk facilities.

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)

-16

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

13

Water-related OPEX (+/- % change)

531

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

255

Please explain

CAPEX expenditures include wastewater treatment system upgrades, ash pond closures/dry ash conversion, groundwater monitor systems and 316(b) compliance measures. These expenditures decreased from 2018 to 2019 due to the conclusion of wastewater treatment upgrades and installation of groundwater monitoring systems at two of our largest coal-fired energy centers. Spending is expected increase by 13% in 2020 due to similar investments at other energy centers, but are expected to decrease annually through 2023 as these projects are completed.

Water-related OPEX spending is the O&M cost necessary for operation of the water-related CAPEX projects. OPEX spending increased by 531% because several upgrades (i.e. closed ash ponds, wastewater treatment upgrades) completed construction and became operational in 2019. OPEX costs are expected to increase annually, but at much lower rates, due to the operational requirements of the new water-related investments currently under construction.

W7.3

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

	Use of climate-related scenario analysis	Comment
Row 1	Yes	To assess the resilience of Ameren Missouri's IRP against potential future climate policies and associated emissions requirements, we leveraged the EPRI study "Grounding Decisions: A Scientific Foundation for Companies Considering Global Climate Scenarios and Greenhouse Gas Goals," which summarized over 1,000 climate scenarios from the IPCC and others. The study presents a scientifically-based framework for considering uncertainty in climate-scenario analysis and provides insights that can be applied companies or organizations. We also published a Water Resilience Assessment that

		looked at current and future availability of water resources across Ameren service territory and supply chain under a variety of potential climate change scenarios. We set CO2 emission reduction targets as part of our IRP to reduce 35% by 2030, 50% by 2040, and 80% by 2050 compared to 2005 levels (which supports a 2°C goal) and develop our 2019 Building a Cleaner Energy Future Report (AmerenInvestors.com).

W7.3a

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

Yes

W7.3b

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

	Climate-related scenarios and models applied	Description of possible water-related outcomes	Company response to possible water-related outcomes
Row 1	2DS RCP 2.6	A study area was defined for this report to include the Upper Mississippi and the Lower Missouri Water Resources Region, which represents Ameren's service area, as well as specific portions of the Powder River Basin in Wyoming, which represents a key portion of Ameren's supply chain. Water stress is projected to be near normal for most areas within Ameren's service area in the time period around 2030. With precipitation projected to see a slight increase, the Upper Mississippi and the lower portion of Missouri Regions are anticipated to see an increasing trend for maximum monthly flow and flooding events. Precipitation is also expected to have seasonal variability, with specific increases seen in the spring. However, the projected increase in temperature and evaporation and potentially lower streamflow in the summer is anticipated	Our climate and water-related studies indicated the potential for increased variability of precipitation and flood events in our service territory, and potential increased drought in the Powder River Basin, a key portion of our supply chain. Our actions include: • Response to physical risks: For future flooding events, we have implemented more vigilant surveillance and monitoring of local river stages following extreme rainfall or drought conditions. We have constructed flood walls, upgraded berms, implemented storm water capture and control efforts, and relocated equipment within substation sites susceptible to flooding. We are burying lines most susceptible to weather-related damage. For overhead line assets, we increasingly use composite material poles and cross-arms, line post insulators, 360-degree pole guying,

		to outweigh a projected increase in average annual precipitation, and contribute to an increase in drought events by midcentury, particularly in summer months. The Powder River Basin, already considered an arid region, may experience increased water stress. The potentially higher temperatures, higher evaporation and lower summer stream flows are likely to contribute to a potential future increase in drought severity and frequency. The projections for the future flooding trend are mixed as the historical instantaneous peak flows in this area has been steadily decreasing, while projected maximum monthly flow is shown to increase in the future.	and mechanical line dampers. All are effective in neutralizing the otherwise destructive effects of wind and moisture. Significant portions of these upgrades are set to be completed in the near future. • Response to water conservation: While our Water Resilience Assessment indicated low water scarcity risk in our service territory we are currently implementing water-saving measures such as transitioning to dry ash handling and investment in renewable technologies, energy efficiency measures, and smart grids to facilitate continues incorporation of non-water-intensive generation. These majority of these water efficiency upgrades are expected to be complete by 2021

W7.4

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

Row 1

Does your company use an internal price on water?

No, and we do not anticipate doing so within the next two years

Please explain

Ameren has not implemented an internal price on water. Ameren has however included a carbon price in its evaluation of long-term resource planning for its Missouri regulated business through its 2017 Integrated Resource Plan (IRP) process. The price is included to represent the expectation for either regulation of carbon dioxide (CO2) emissions through a mechanism that establishes an explicit price for CO2 emissions, such as a carbon tax or cap-and-trade program, or emission credit trading markets.

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	Business level specific targets and/or goals	Targets are monitored at the corporate level Goals are monitored at the corporate level	Ameren developed targets as described below, based on best sector practice, water stewardship, risk mitigation, and regulatory compliance requirements. Solutions were determined through engineering evaluations and risk assessments for each site. Progress towards elimination of the use of water for ash handling is monitored through the use of project schedules and cost management procedures. Groundwater quality is monitored through the use of sampling wells and laboratory analyses over the long term.

W8.1a

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

Target reference number

Target 1

Category of target

Other, please specify

Eliminate use of water for ash handling

Level

Site/facility

Primary motivation

Recommended sector best practice

Description of target

Eliminate the use of water for ash handling (by converting to dry ash management) at the Labadie Energy Center, thereby reducing water use by approximately 4.8 billion gallons a year. This is a multi-year design and construction project.

Quantitative metric

Other, please specify

Percent of project complete

Baseline year

2015

Start year

2016

Target year

2019

% of target achieved

99

Please explain

Target is based on sector best practice, water stewardship, risk mitigation, and regulatory compliance requirements. Metric is percent complete of engineering and construction project to install new facilities.

Target reference number

Target 2

Category of target

Other, please specify

Eliminate use of water for ash handling

Level

Site/facility

Primary motivation

Recommended sector best practice

Description of target

Eliminate the discharge of water for ash handling (by converting to a closed-loop bottom ash and dry fly ash management system) at the Sioux Energy Center thereby reducing water use by approximately 1.7 billion gallons a year. This is a multi-year design and construction project.

Quantitative metric

Other, please specify

Percent of project complete

Baseline year

2015

Start year

2016

Target year

2020

% of target achieved

45

Please explain

Target is based on sector best practice, water stewardship, risk mitigation, and regulatory compliance requirements. Metric is percent complete of engineering and construction project to install new facilities.

W8.1b

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

Goal

Improve wastewater quality beyond compliance requirements

Level

Business activity

Motivation

Reduced environmental impact

Description of goal

Our goal is to accelerate our compliance efforts where possible and to minimize the impact of our operations on surface waters. Such efforts include installation of waste water treatment facilities and the use of cutting edge technologies to treating groundwater at ash ponds located at coal fuelled energy centers. This goal is important for Ameren because non-compliance with water-related regulation poses a regulatory and financial risk. In addition, we have a commitment to environmental stewardship which prioritizes responsible use of resources, and we strive to reduce our impact on these resources and the environment where possible.

Baseline year

2015

Start year

2015

End year

2020

Progress

Wastewater treatment system upgrades are completed at Rush Island, and nearing completion at the two other coal-fired energy centers which improves the quality and efficiency of wastewater treatment. In addition, the transition to dry ash handing and the closing of our ash basins has led to decreased volumes of water exposed to pollutants in ash residuals and improving the overall quality of water going through wastewater treatment. These upgrades will result in increased efficiency of wastewater treatment and reduced water use in operations. These activities are projected to save 230 million gallons of water annually starting in 2023, which is one way the success of these measures is measured. Starting in 2012, Ameren has saved more than 120 billion gallons of water each year while still generating reliable energy. We've done this through our transition to cleaner sources of energy, and upgrading water-related processes at our existing energy centers.

W9. Verification

W9.1

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

No, but we are actively considering verifying within the next two years

W10. Sign off

W-FI

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

- Ameren 2017 IRP - Chapter 5 Environmental Compliance.pdf
- pond-closure-fact-sheet.pdf
- Ameren Water Resilience Assessment.pdf
- Rush Island Haley-Aldrich Water Quality Report.pdf
- Ameren Climate Risk Report - Building a Cleaner Energy Future.pdf
- Meramec Haley-Aldrich Water Quality Report.pdf
- Labadie Haley-Aldrich Water Quality Report.pdf
- Sioux Haley-Aldrich Water Quality Report.pdf
- Ameren 2020 Sustainability Report.pdf

W10.1

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

	Job title	Corresponding job category
Row 1	Vice President , Sustainability & Electrification	Other, please specify Vice President, Sustainability & Electrification

W10.2

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

No

SW. Supply chain module

SW0.1

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

	Annual revenue
Row 1	

SW0.2

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

SW1.1

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

SW1.2

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

	Are you able to provide geolocation data for your facilities?	Comment
Row 1		

SW2.1

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

SW2.2

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

SW3.1

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

Submit your response

In which language are you submitting your response?

Latin American Spanish

Please confirm how your response should be handled by CDP

	I am submitting to	Public or Non-Public Submission
I am submitting my response	Investors	Public

Please state the main reason why you are declining to respond to your Customers

Prefer to work directly with customer, not through a third party

Please confirm below

I have read and accept the applicable Terms