

Welcome to your CDP Climate Change Questionnaire 2019

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

Ameren Corporation, headquartered in St. Louis, MO, is a public utility holding company with annual revenues of more than \$6 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, is approximately 10,300 MWs as of 12/31/18. In 2018, AMO's energy supply was: 68% from coal, 24% from nuclear, 2% from hydro, 1% from purchased wind, 1% from gas and 4% from purchased power.

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

Ameren released its annual Corporate Social Responsibility (CSR) report, available at AmerenCSR.com, on May 2, 2019. The report outlines actions to balance customer and community development, workforce needs, the environment and shareholders. The report details how AMO is transitioning to a cleaner, more diverse generation portfolio and how overall emissions have declined since 2005. On March 11, 2019, Ameren published a new report, *Building a Cleaner Energy Future*, which provides a comprehensive look at the steps Ameren is taking to meet its obligation to provide safe, reliable and affordable energy in an environmentally responsible manner while effectively balancing climate-related risks. Ameren also participates in a voluntary industry initiative coordinated by the Edison Electric Institute (EEI) to provide electric industry investors with more uniform and consistent environmental, social, and governance (ESG) and sustainability-related metrics. EEI's ESG/sustainability reporting template and *Building a Cleaner Energy Future* are available under the ESG section of AmerenInvestors.com.

Ameren's 2018 year end rate base consists of 73% from electric and natural gas distribution investments, 13% coal generation, 11% non-carbon emitting nuclear and renewable generation, and 3% gas generation. These percentages reflect strategic allocation of increasing amounts of capital to distribution and transmission businesses and Ameren's view that the energy grid will be increasingly important and valuable to its customers, the communities it serves and its shareholders. This increasing value of the grid is expected to be driven by the

need for a smarter, more hardened energy delivery system to incorporate increasingly more distributed and renewable generation sources. Ameren expects the percentage of its rate base represented by fossil fuel-fired generation investments to decline in the years ahead as it focuses on increased grid and renewable generation investment.

Ameren is advancing its commitment to environmental stewardship through AMO's 20-year Integrated Resource Plan (IRP), which was issued in September 2017. The IRP outlines plans to significantly increase AMO's renewable energy portfolio, including the addition of at least 700 MWs of wind generation by 2020 and 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. Further, AMO has a goal to reduce carbon dioxide emissions 35% by 2030, 50% by 2040 and 80% by 2050, as compared to 2005 levels. 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, 2018, 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.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Row 1	January 1, 2018	December 31, 2018	Yes	1 year

C0.3

(C0.3) Select the countries/regions for which you will be supplying data.

United States of America

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

USD

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your consolidation approach to your Scope 1 and Scope 2 greenhouse gas inventory.

Operational control

C-EU0.7

(C-EU0.7) Which part of the electric utilities value chain does your organization operate in? Select all that apply.

Row 1

Electric utilities value chain

Electricity generation
Transmission
Distribution

Other divisions

Gas storage, transmission and distribution
Smart grids / demand response
Micro grids

C-OG0.7

(C-OG0.7) Which part of the oil and gas value chain and other areas does your organization operate in?

Row 1

Oil and gas value chain

Other divisions

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Board-level committee	The full Board oversees environmental matters relating to policy and strategy, including climate issues. The Board regularly receives and discusses reports from management and external experts and routinely considers environmental issues (including climate issues). The Audit and Risk Committee oversees our processes, guidelines, and policies for identifying, assessing, monitoring, and mitigating enterprise risks, including climate-related risks. The Nuclear and Operations Committee (NOC) oversees and reviews our operations, including environmental compliance. Senior management updates the NOC on all aspects of the Company's operations throughout the year, including compliance with environmental regulations. The Nominating and Corporate Governance Committee oversees our corporate governance, including our proxy statements, shareholder proposals and any reports the Company issues in response to shareholder proposals.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – some meetings	<ul style="list-style-type: none"> Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies 	We are committed to operating in a sustainable manner and carefully balance our key responsibilities to our customers and the communities we serve, our co-workers, our shareholders, and the environment. Reflecting this balanced approach to sustainability, Ameren's commitment to strong corporate governance includes policies and principles that integrate ESG matters into our broader risk

	<p>Reviewing and guiding annual budgets</p> <p>Reviewing and guiding business plans</p> <p>Monitoring implementation and performance of objectives</p> <p>Overseeing major capital expenditures, acquisitions and divestitures</p> <p>Monitoring and overseeing progress against goals and targets for addressing climate-related issues</p>	<p>management and strategic planning initiatives. We are focused on ensuring that our corporate governance and enterprise risk management (ERM) practices protect and enhance long-term shareholder value and reflect our environmental stewardship.</p> <p>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. The Nuclear and Operations Committee oversees and reviews the Company's operations, including safety, performance and compliance issues. This includes environmental compliance matters and related risk management policies and practices. Senior management updates the Nuclear and Operations Committee on all aspects of the Company's operations throughout the year, including long-term generation planning and compliance with environmental regulations. The Nominating and Corporate Governance Committee: Oversees Ameren's corporate governance. This oversight includes review of Ameren's proxy statements, shareholder proposals, the Company's responses to shareholder proposals, and reports the Company issues in response to shareholder proposals. The Finance Committee oversees and reviews major capital projects, including projects related to environmental (climate) compliance.</p> <p>An example of how climate-related issues are reviewed 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 reviewed by the Board of Directors., as well as the Nuclear and Operations Committee and the Nominating and Corporate Governance Committee.</p>
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C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Chief Executive Officer (CEO)	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

The CEO is the highest position responsible for climate change at Ameren. We have several officers with responsibilities for climate-related issues, including (i) Senior Vice President – Innovation & Corporate Strategy, who reports to the Executive Vice President & Chief Financial Officer (CFO); (ii) Senior Vice President – Finance & Chief Accounting Officer, who reports to the Executive Vice President & Chief Financial Officer; (iii) Senior Vice President - General Counsel & Secretary, who reports directly to the CEO and (iv) Business Unit Presidents, who report directly to the CEO. Our CFO also reports directly to our CEO. Our strategy and actions are subject to stringent governance requirements.

In 2010, Ameren created a Corporate Social Responsibility (CSR) Council (formerly known as Corporate Sustainability Council) to research and recommend policies and improvement objectives, track our sustainable practices, develop ways to engage employees and stakeholders on the issues, and help guide Ameren to be more sustainable in the future. In 2018, Ameren created the CSR department to lead efforts on ESG, climate-related issues and shareholder advocacy efforts. Additionally in 2018, Ameren created a CSR Executive Steering Committee to lead Ameren's enterprise-wide social responsibility efforts including providing input to our CSR strategy and foster and advocate for a culture of sustainability among co-workers and suppliers. In 2019, Ameren further emphasized the importance of managing ESG and climate-related issues by establishing a Vice President-Sustainability & Electrification reporting directly to the Senior Vice President-Innovation & Corporate Strategy.

We have a robust enterprise risk management (ERM) and governance programs to identify, evaluate and manage risks. Our ERM program is a comprehensive, consistently applied management framework that captures all climate-related policy and legal, physical, reputational and financial risks. Risks are evaluated using criteria associated with financial and qualitative impacts and probability associated with the likelihood of impact. Risk management is embedded into the business processes and key decision making at all levels of the Company. 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. Most of these teams report to the officers with responsibilities for climate-related issues (e.g., CSR, environmental, innovation, and corporate planning teams report to the SVP of Innovation & Corporate Strategy). In addition, our Board of Directors has extensive oversight over our strategy and execution and all aspects of risk, including key climate risks.

Ameren developed its Climate Risk Report-Building a Cleaner Energy Future in 2018 and early 2019. The report was published in March 2019 and includes an analysis of the impact of technological and policy changes that are consistent with limiting global warming. It describes the comprehensive steps Ameren is taking to meet its obligation to provide safe, reliable and affordable energy in an environmentally responsible manner to its customers and the communities it serves while effectively balancing climate-related risks. This report leveraged the results of our participation in the Electric Power Research Institute's study regarding utility industry scenario analyses with respect to climate change. As the plan was under development several meetings were held with the Board of Directors. The report was prepared by a cross-functional group of subject matter experts from across the company, including representatives from our Communications, Corporate Planning, Corporate Social Responsibility, Environmental, Finance, Legal, Electric and Gas Operations, and Strategy and Innovation departments. Members of Ameren's Executive Leadership Team oversaw and provided guidance on the report's preparation. The report was reviewed by the Board of Directors, as well as the Nuclear and Operations Committee and Nominating and Corporate Governance Committee.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

Yes

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Who is entitled to benefit from these incentives?

Corporate executive team

Types of incentives

Monetary reward

Activity incentivized

Efficiency target

Comment

Members of the Ameren Leadership Team (ALT) in Customer Operations at Ameren Missouri, members in Ameren Illinois, and members of the ALT in Business and Corporate Services are eligible for annual monetary incentive compensation related to energy-efficiency as follows:

Ameren Missouri Customer Operations ALT: Achievement of megawatthour (mwh) savings associated with energy-efficiency programs.

Ameren Illinois ALT: Achievement of mwh savings associated with energy-efficiency programs, low/moderate income energy-efficiency programs and weatherization of single-family homes.

Ameren Business and Corporate Services ALT: Achievement of mwh savings associated with energy-efficiency programs, low/moderate income energy-efficiency programs and weatherization of single-family homes through the Ameren Illinois and Ameren Missouri programs.

C2. Risks and opportunities

C2.1

(C2.1) Describe what your organization considers to be short-, medium- and long-term horizons.

	From (years)	To (years)	Comment
Short-term	0	5	Short-term: From 0 to 5 years
Medium-term	5	10	Medium-term: From 5 to 10 years
Long-term	10	30	Long-term: From 10 to equal to or greater than 30 years

C2.2

(C2.2) Select the option that best describes how your organization's processes for identifying, assessing, and managing climate-related issues are integrated into your overall risk management.

Integrated into multi-disciplinary company-wide risk identification, assessment, and management processes

C2.2a

(C2.2a) Select the options that best describe your organization's frequency and time horizon for identifying and assessing climate-related risks.

	Frequency of monitoring	How far into the future are risks considered?	Comment
Row 1	Six-monthly or more frequently	>6 years	We have robust enterprise risk management (ERM) and governance programs to identify, evaluate and manage risks. Our ERM program is a comprehensive, consistently applied management framework that captures all climate-related policy and legal, physical, reputational and financial risks. Risk management is embedded into the business processes and key decision making at all levels of the Company. Our Board has extensive oversight over our strategy and execution and all aspects of risk, including key climate risks. In addition, the Audit and Risk Committee (ARC) 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. Ameren's Board and ARC each meet at least five times per year.

C2.2b

(C2.2b) Provide further details on your organization's process(es) for identifying and assessing climate-related risks.

Oversight, accountability and risk management are important elements of an effective strategy for identifying and assessing climate-related risks. We have established robust risk management and governance systems to identify, evaluate and manage these risks. Reflecting our balanced approach to sustainability, we integrate our priorities into our broader enterprise risk management and strategic planning initiatives.

Ameren has a process for identifying risks and opportunities associated with climate-related issues. This process allows Ameren to make prudent decisions, while meeting customers' energy needs in a safe, reliable, efficient and environmentally responsible manner. We assess climate-related risks, including risks related to regulatory changes, changes in customer behaviour, 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 our enterprise risk management (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.

In 2018, Ameren created the Corporate Social Responsibility (CSR) department to lead efforts on ESG, climate-related issues and shareholder advocacy efforts. Additionally in 2018, Ameren created a CSR Executive Steering Committee to lead 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. Climate-related risks and opportunities are identified by numerous functions within the Company, including CSR and Ameren Missouri Power Operations, Energy Efficiency, Innovation & Corporate Strategy, and others through analysis, research and discussions by and among our different business segments. 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 (e.g., potential substantive financial impact). That evaluation is 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 necessary. Ameren established an ERM program for governance and oversight of enterprise risks and opportunities. Each enterprise risk has an internal owner who is required to periodically review that risk and update it along with the current risk mitigation plan. The risks are evaluated on criteria associated with financial impacts and the probability associated with the likelihood of the impacts. The ERM process is used to ensure that corporate objectives are consistent with the overall risk tolerance and integrates the risk assessment into decision making at appropriate levels, while effectively mitigating significant risks. ERM increases accountability for risk identification, assessment and mitigation. In addition, Ameren management reports regularly on environmental compliance matters to the Nuclear and Operations Committee of Ameren's Board of Directors. The Board of Directors oversees environmental policy and the potential impact of climate change on the company's strategy.

All risks and opportunities are assessed using a consistent risk framework and methodology. Financial impacts can be quantified and related to capital and O&M expenditures. Qualitative impacts are scored using a consistent criteria and can be related to regulatory, safety, and velocity. After the assessment process is complete, the risks and opportunities are reviewed by the risk owner, function/department owner, and ultimately approved by the segment/business line owner. Risks and opportunities are then prioritized by their financial impact to the company or qualitative impact scores. Those with the highest impact are prioritized based on the scoring criteria. The business lines, along with the ARC, perform a review into the top three exposed values in each category/profile type. The review includes a discussion of the risk/opportunity tolerance, residual mitigation plans, and cost to mitigate.

C2.2c

(C2.2c) Which of the following risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	<p>Ameren has a corporate process for identifying significant risks and opportunities that allow our businesses to make prudent decisions while meeting our customers' energy needs in a safe, reliable, efficient and environmentally responsible manner, including consideration of climate-related risks. Ameren develops action plans that mitigate risk, manage long-term customer costs and create shareholder value. Operating an electric utility is a highly regulated activity. Current and emerging regulations, including those related to climate change are systematically analyzed. For example, we believe our Ameren Missouri Integrated Resource Plan (IRP) has sufficient flexibility to meet any reasonable changes in emissions-reduction policies, but exercising such flexibility may have a negative impact on customer costs and reliability. The IRP included a goal of reducing CO2 emissions 35% by 2030, 50% by 2040, and 80% by 2050 from 2005 levels. As a result of the IRP's flexibility, we further believe we are effectively mitigating policy and legal risks associated with climate-related activities.</p> <p>As of December 31, 2018, Ameren Missouri's fossil fuel-fired energy centers represented 16% of Ameren's rate base. Our five year plan (2019-2023) directs significant investments to transmission and distribution systems and renewable generation. Investments in transmission and distribution allow systems to be more efficient and provide access to renewable resources. The following initiatives are part of our plan: energy efficiency programs; optimize operations at our energy centers; evaluating the potential retirement of existing coal-fired generation and new low/ zero-emitting generation; and acquiring hybrid bucket trucks, natural gas fuel trucks and electric vehicles. Ameren Illinois joined with energy stakeholders in supporting the Future Energy Jobs Act, which extends the state's landmark Illinois Energy Infrastructure Modernization Act and gives Ameren Illinois the ability to continue modernizing its electric distribution system while seeking recovery under a formula ratemaking process.</p>
Emerging regulation	Relevant, always included	<p>Current and future policies at the national and state level can have a significant impact on the electric power industry, our business, our customers, the communities we serve and our shareholders. In addition to complying with existing laws and regulations, Ameren actively engages with key stakeholders and monitors and reviews applicable policies for potential impacts to our current and future operational analysis and decision making. The changing nature of international efforts and domestic rules and regulations highlights the high level of uncertainty around energy policy we face in shaping our future decisions, particularly as they relate to reshaping our generation portfolio.</p>

		<p>Typically, environmental policies, rules and regulations have considered technical feasibility, costs, timelines and other factors when implemented. Other potential climate-related policies and regulations could be enacted and create challenges in these areas, which could result in higher costs and lower levels of reliability for our customers. We will continue to advocate for responsible energy and environmental policies that benefit our customers, the communities we serve and the environment. We believe the Ameren Missouri Integrated Resource Plan (IRP) has sufficient flexibility to meet any reasonable changes in emissions-reduction policies, but exercising such flexibility may have a negative impact on customer costs and reliability. The IRP included a goal of reducing CO2 emissions 35% by 2030, 50% by 2040, and 80% by 2050 from 2005 levels. As a result of the IRP's flexibility, we further believe we are effectively mitigating policy and legal risks associated with climate-related activities.</p>
Technology	Relevant, always included	<p>The design, implementation, and management of several programs associated with reduction of climate-related risk (e.g., energy efficiency programs, and smart grid programs) create performance and technology risks. The performance risk issues are associated with the potential outcomes and measurable results of programs and the risk that programs do not deliver the expected results, such as sufficient energy savings or improved reliability. The performance of programs may affect Ameren's ability to recover costs through regulatory proceedings and may also negatively affect customers' perception of energy efficiency programs. The technology risks are associated with the risk that technologies targeted by a program will not perform as expected and fail to deliver results as expected. For example, a failure of equipment that was installed to reduce carbon emissions would expose Ameren to potential under-recovery of costs. In addition, new technologies that may emerge as a result of increased focus on GHG reduction technologies could change the use of natural gas and electricity. Improvements in technologies, such as plug-in electric vehicles and fuel cells, may increase demand for these products and provide additional stress on Ameren's delivery system. These demands could require development of additional transmission and distribution systems. These and other technologies could also affect natural gas and electric sales.</p> <p>Ameren addresses these risks by designing programs that contain a mix of initiatives to avoid over-reliance on any one approach, technology or market. This mix includes different services, delivery mechanisms, and incentive types/levels. In 2010, Ameren created the Technology Point of View Team to address technology expected to</p>

		<p>have significant future impact on our business. This team offered a framework for evaluating and monitoring potential “game-changing” technologies. In 2015, Ameren’s Innovative Technologies initiative was established to advance innovative technologies and related impacts on customer loyalty, regulatory/policy frameworks, and economic opportunities with a view 15 years into the future. The teams assess various technologies and recommend action plans to create successful change. The initiative’s efforts complement other related innovation activities occurring across Ameren.</p>
Legal	Relevant, sometimes included	<p>EPA intends to regulate carbon emissions from coal fired electric generating units (not natural gas) and finalized its Affordable Clean Energy regulations on July 8, 2019. Based upon various appellate court and United States Supreme Court decisions, Ameren believes that climate-related litigation would likely be pre-empted under the Clean Air Act by such EPA regulations.</p> <p>Specifically, the rejection by appellate courts of litigation brought following Hurricane Katrina effectively put to rest the risk of common law claims relating to GHG (i.e., nuisance, reduction in property values) and EPA’s decision to regulate power plant CO2 emissions has reduced the likelihood of similar lawsuits. A growing number of courts view such litigation as posing political questions and not proper for judicial review. Ameren continually reviews its capital budget to manage its future needs. Consideration is given to potential impacts of climate legislation/regulations as Ameren plans its long-term capital needs. Current investment in the grid, including smart grid, distribution, and transmission enhances our ability to manage these risks by facilitating the addition of newer technologies that may be more carbon friendly.</p>
Market	Relevant, always included	<p>If market prices do not reflect increased costs associated with needed investments, Ameren Missouri may sell less energy in the market. However, because Ameren Missouri is a regulated utility it is allowed to request changes in its rate structure as market conditions fluctuate. Other risks to consider include investor uncertainty, which could have financial implications for both the company and for customers. Ameren is committed to its role as a leader in providing a secure energy future for our customers. It is imperative that future business plans continue to be prudent and in the best interest of our customers. There is a risk that customer satisfaction levels will decrease as a result of higher rates due to increased costs associated with actions taken to address climate change. Ameren is taking steps to reduce the risks related to poor recovery mechanisms and customer bad debt expense. Ameren’s Risk Management Department has in place</p>

		<p>policies to address fuel price volatility. As the provisions of any final climate legislation/regulation become known, Ameren’s risk management department will review those policies to ensure they will be sufficient to address any fuel price volatility that may arise. Robust policies and processes exist to allow Ameren management to review and approve each offset or allowance financial hedge that may be executed. Caps or limits on specific transactions may be implemented to diversify the portfolio of hedges to minimize the negative financial impact associated with any single hedge or offset project.</p>
Reputation	Relevant, always included	<p>We manage our business in a sustainable fashion, balancing the needs of the customers and communities we serve, our co-workers, the environment and our shareholders. Being mindful of potentially differing priorities among our stakeholders, we spend significant effort analyzing strategic and operational options. We consider variables such as energy and environmental regulation, policy uncertainty (including climate), cost of renewables, cost of energy, demand for power, adoption of innovations such as Electric Vehicles, and impact of Energy Efficiency programs.</p> <p>We take appropriate measures and actions to comply with existing rules and regulations so as to protect our environment and the communities we serve. We manage our business with a commitment to sustainability, exercising disciplined cost management to meet our customers’ expectations for affordability and reliability. We proactively communicate with our stakeholders on our compliance strategies through robust disclosure, shareholder engagement and regulatory filings. And our strong governance framework demonstrates our commitment to oversight and accountability. Ameren is advancing our commitment to environmental stewardship through Ameren Missouri’s Integrated Resource Plan (IRP) issued in September 2017. The 2017 IRP is designed to ensure that customers’ long-term electric energy needs are met in a reliable, cost-effective and environmentally responsible manner. This plan includes significant increase in our renewable energy portfolio and goals for CO2 emission reductions of 35% by 2030, 50% by 2040, and 80% by 2050. Through implementing our strategy to significantly reduce GHG emissions, we strongly believe that we are effectively mitigating reputational risks associated with climate change.</p>
Acute physical	Relevant, always included	<p>Many physical risks exist and uncertainty is associated around the timing of the physical changes in weather patterns or extreme weather events. In general, most storm events are managed and planned based on available information; however, it is difficult to anticipate the severity of storm events until they occur.</p>

		<p>Changes in weather patterns, including those that impact temperatures and precipitation, could significantly affect customer load patterns. These effects may increase or decrease the volume of electric and natural gas sales. In particular, the warming of the climate could increase electricity sales and reduce gas sales for heating load. This could result in increases or decreases in revenues for Ameren, depending on the level of warming. It also could reduce the production from renewable resources.</p> <p>Staying ahead of weather related impacts requires constant monitoring of weather conditions in our territories and requires planning and preparation that is constantly updated and tested. Recovery of weather related expenditures is directly related to preparation, reporting, and fulfillment of requirements imposed by regulators. One focus is on vegetation management in conjunction with requirements set forth by our regulators. Ameren also receives real-time weather prediction information from independent providers. To enhance weather preparedness, Ameren Missouri partners with Saint Louis University on a unique weather forecasting system called Quantum Weather. A network of monitoring stations provides neighborhood-by-neighborhood predictions of potential severe weather – hours in advance of its arrival.</p> <p>Ameren is investing in transmission system improvements to ensure that we will be able to provide reliable, safe service now and in the future. Ameren addresses fuel supply disruption risks via implementation of new fuel inventory policies and the development of alternative delivery options at many of its facilities. Ameren conducted assessments of the potential impact of limited water resources on the operation of our energy centers along rivers.</p>
Chronic physical	Relevant, always included	<p>Changes in weather patterns, including those that impact temperatures and precipitation, could significantly affect customer load patterns. These effects may increase or decrease the volume of electric and natural gas usage. In particular, the warming of the climate could increase electricity sales and reduce natural gas sales for heating load. This could result in increases or decreases in revenues for Ameren, depending on the level of warming. It also could reduce the production from hydroelectric, wind, and solar renewable resources. It could also impact reliability and increase customer cost.</p> <p>Induced changes in natural resources may include low water levels in rivers; warmer water in rivers due to lower flows and higher ambient temperatures, reduced water quality due to low flows and higher ambient temperatures, increased flooding events along rivers; and longer growing seasons with increased vegetation. Changes that resulted in flooding could potentially impact generation. Transmission</p>

		<p>systems, distribution systems and substations. This could potentially cause system failure which may result in additional requirements for hardening of the system. Longer growing seasons could result in increased vegetation that could potentially interfere with transmission and distribution lines. Over the next five years (2019-2023) Ameren plans to invest \$2.4 billion in transmission system improvements to ensure that we will be able to provide reliable, safe service now and in the future. In addition, we have a robust enterprise risk management (ERM) and governance programs to identify, evaluate and manage risks. Our ERM program is a comprehensive, consistently applied management framework that captures all climate-related policy and legal, physical, reputational and financial risks. Risks are evaluated using criteria associated with financial and qualitative impacts and probability associated with the likelihood of impact.</p>
Upstream	Relevant, always included	<p>Ameren's Market Risk Management Department has in place policies to address fuel price volatility and supply chain risks. As the provisions of any final climate-related legislation/regulation become known, Ameren's risk management department will review those policies to ensure they will be sufficient to address any fuel price volatility that may arise. Robust policies and processes exist to allow Ameren management to review and approve each offset or allowance financial hedge that may be executed. Caps or limits on specific transactions may be implemented to diversify the portfolio of hedges to minimize the negative financial impact associated with any single hedge investment or offset project.</p>
Downstream	Relevant, always included	<p>Changes in consumer behavior could impact the consumption of electricity and natural gas in our service territory. Customers could implement life style changes due to climate change as well as in response to higher electricity and natural gas costs. Customers could also install more customer-owned renewable generation if policies do not change as quickly as consumers desire them to change. This could result in decreased electric sales.</p> <p>It is likely that the price of electricity will increase as a result of climate-related regulations. Increased costs could impact customer consumption levels thereby impacting financial performance. Natural gas prices may also increase if utilities use that fuel to produce electricity, which could impact customer use of natural gas.</p> <p>In keeping with our commitment to incorporate more renewable energy in our generation portfolio, Ameren Missouri is working to advance community solar and solar partnership pilot projects as wells as a renewable choice program. Under the Community Solar pilot, customers will be able to subscribe for energy from an Ameren Missouri utility scale solar generation project that would be built once customers have subscribed for sufficient capacity. Under the Solar</p>

		<p>Partnership pilot, Ameren Missouri-owned solar generation projects can be constructed on the sites of business customers.</p> <p>In 2018, Ameren Missouri began offering The Renewable Choice Program which is designed to help participating customers meet their energy needs from clean, renewable generation. Under the program, customers could subscribe to purchase up to 100% of their average energy usage.</p>
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C2.2d

(C2.2d) Describe your process(es) for managing climate-related risks and opportunities.

Identifying and assessing risks and opportunities are the first steps towards managing climate-related matters. In 2018, the Corporate Social Responsibility (CSR) department was formed to lead efforts on ESG, climate-related issues and shareholder advocacy efforts. Additionally in 2018, Ameren created a CSR Executive Steering Committee to lead Ameren's 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. Additionally, Ameren's Enterprise Risk Management (ERM) team provides governance and oversight of risks and opportunities. Each enterprise risk has an internal owner who is required to periodically review that risk and update it along with the current risk mitigation plan. Risks are evaluated on criteria associated with financial and qualitative impacts and probability associated with the likelihood of impact. Risk mitigation plans include documenting controls, activities, and fallback treatments. The ERM program is used to ensure corporate objectives are consistent with the overall risk tolerance and integrates risk assessment into decision making at appropriate levels, while effectively mitigating significant risks. Ameren management reports regularly on environmental compliance matters to the Nuclear and Operations Committee of Ameren's Board of Directors. The full Board of Directors oversees environmental policy and the potential impact of climate-related matters on the company's strategy. Ameren's Audit and Risk Committee (ARC) of the Board of Directors provides governance and oversight of ERM. ARC meets at least five times per year.

An example of how transitional climate-related risks and opportunities are managed at Ameren is demonstrated through the development of the 2017 Ameren Missouri Integrated Resource Plan (IRP). The 2017 IRP is designed to ensure that customers' long-term energy needs are met in a reliable, cost-effective and environmentally responsible manner. Our preferred plan focuses on transitioning the generation fleet to a cleaner and more fuel diverse energy portfolio in a responsible fashion: significantly expanding renewable generation and retiring over half of our coal-fired generating capacity, and continuing to offer energy efficiency programs to customers and adding demand response programs. The IRP includes a goal of reducing CO2 emissions 35% by 2030, 50% by 2040 and 80% by 2050 compared to 2005 levels.

An example of how physical risks are mitigated is provided in our “Building a Cleaner Energy Future” report issued in March 2019. Under the Risk Management and Governance section, we identified the four critical climate-related risks that affect the company: policy and legal, physical, reputational, and financial. Within each risk, we identify key mitigation strategies. The primary means of mitigating physical risks of extreme weather events is to make certain asset enhancements and improvements commonly known as “system hardening,” to avoid potential impacts and damages that may otherwise occur. 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. This strategy includes system hardening and 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.

- System Hardening: Enhancements that improve reliability and protect against a changing climate include burying lines most susceptible to weather-related damage and selecting material that neutralizes the destructive effects of wind and moisture.
- Emergency Planning: Ameren stores spare transformers, switchgear, and other substation-related equipment across our service territory. Regional preparedness measures include the MISO transmission scenario planning process, membership in the Midwest Mutual Assurance Group (a consortium of electric utilities that provide emergency support for one another in events following extreme weather events), and transformer-sharing agreements.
- Situational Awareness: Ameren’s monitoring and forecasting of disruptive events included the formation of a Watch Center and incorporation of real-time weather prediction information.
- Emergency Response: In addition to proactive measures, Ameren utilizes an Incident Command and Control structure for emergency management, which enables a coordinated immediate response to a disruptive event.

We believe these planning and execution measures taken together directly address the potential impacts posed by changes in near-term weather patterns and longer-term climate trends.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Technology: Costs to transition to lower emissions technology

Type of financial impact

Capital investments in technology development

Company- specific description

The 2017 Integrated Resource Plan (IRP) is designed to ensure that customers' long-term electric energy needs are met in a reliable, cost-effective and environmentally responsible manner. Ameren's preferred plan focuses on transitioning the generation fleet to a cleaner and more fuel diverse energy portfolio in a responsible manner and includes: the addition of at least 700 MW of wind generation by 2020 (representing an investment of approximately \$1.0 billion); the addition of 100 MW of solar generation by 2027; the planned retirement of more than half of Ameren Missouri's coal-fired generation capacity over the next twenty years; continuation of cost-effective customer energy-efficiency programs; and continued development of smart grid, communications and other advanced technologies. Ameren Missouri has a goal to reduce CO2 emissions 35% by 2030, 50% by 2040, and 80% by 2050 compared to 2005 levels.

Time horizon

Short-term

Likelihood

About as likely as not

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

1,000,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Ameren is advancing its commitment to environmental stewardship through Ameren Missouri's 20-year Integrated Resource Plan (IRP), issued in September 2017.

The potential financial impact represents Ameren Missouri pursuing ownership of at

least 700 MW of wind generation by 2020 (representing an investment of approximately \$1.0 billion) with multiple wind developers.

Management method

Ameren has a corporate process for identifying risks and opportunities that allow our businesses to make prudent decisions while meeting our customers' energy needs in a safe, reliable, efficient and environmentally responsible manner. Ameren develops action plans that mitigate risk, manage long-term customer costs and improve shareholder value. As of December 31, 2018, Ameren Missouri fossil fuel-fired energy centers represented, 16% of Ameren's rate base. Our five year plan (2019-2023) directs significant investments to transmission and distribution systems and renewable generation. Investments in transmission and distribution allow systems to be more efficient and provide access to renewable resources. The following initiatives are part of our plan: energy efficiency programs, optimizing operations at our energy centers; evaluating the potential retirement of existing coal-fired generation and new low/ zero-emitting generation, and acquiring hybrid bucket trucks, natural gas fuel trucks and electric vehicles. Ameren Illinois joined with energy stakeholders in supporting the Future Energy Jobs Act. Under the Act, Ameren Illinois has increased its investments in energy efficiency. The law also extend the Illinois Energy Infrastructure and Modernization Act that gives Ameren Illinois the ability to continue modernizing its electric distribution system while seeking recovery under a formula ratemaking process.

Cost of management

1,000,000,000

Comment

Ameren is advancing its commitment to environmental stewardship through Ameren Missouri's 20-year Integrated Resource Plan (IRP), issued in September 2017. The IRP outlines plans to significantly increase our renewable energy portfolio, including the addition of at least 700 MW of wind generation by 2020. It also includes the planned retirement of more than half of Ameren Missouri'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. More information is available at AmerenMissouri.com/IRP.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Physical risk

Primary climate-related risk driver

Chronic: Changes in precipitation patterns and extreme variability in weather patterns

Type of financial impact

Other, please specify

Increased operational cost, Increased capital cost, Reduced demand for goods/services, Reduction/disruption in production capacity, Reduction in capital availability, and Reduced stock price (market valuation)

Company- specific description

Changes in the levels of precipitation, including drought, could create potential difficulties with distribution systems from excessive rainfall and flooding to a potential loss of water supply at energy centers due to lower river levels. There is a potential for disruption in fuel supply due to high levels of rainfall and/or flooding. Changes in precipitation could impact the water levels in the Missouri and Mississippi rivers and affect the operation of a number of Ameren Missouri's energy centers. Low water levels in these rivers, due to extreme or prolonged drought, could potentially negatively affect the efficiency of plant operations and a plant's ability to meet thermal discharge effluent regulatory limits that could result in load reductions and/or plant shutdowns. Low water levels could potentially force the installation of cooling towers at the Ameren Missouri energy centers, requiring a large capital investment. Changes in precipitation could cause flooding that would potentially impact transmission and distribution systems. This could potentially cause system failure which may result in additional requirements for hardening of the system.

Time horizon

Short-term

Likelihood

About as likely as not

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

2,400,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Changes in weather patterns, impacting temperatures and precipitation, could impact customer load patterns. These effects may increase or decrease the volume of electric sales and natural gas usage. In particular, the warming of the climate could increase

electricity sales and reduce gas sales for heating load. This could result in increases or decreases to revenues for Ameren, depending on the level of warming. It also could reduce production from hydroelectric, wind, and solar renewable resources.

The potential financial impact represents the total investment in transmission infrastructure over the next five years (2019-2023) to ensure system reliability. It reflects the inherent value of reliable service through the deployment of cost-effective investments in infrastructure equipment as approved through MISO's Transmission Expansion Planning (MTEP) process.

Management method

Staying ahead of weather-related impacts requires constant monitoring of weather conditions in our territories and requires planning and preparation that is constantly updated and tested. Recovery of weather related expenditures is directly related to preparation, reporting, fulfillment of requirements imposed by regulators. One particular focus is on vegetation management in conjunction with requirements set by our regulators. Ameren Illinois joined with energy stakeholders in supporting the Future Energy Jobs Act. Under the Act, Ameren Illinois has increased its investments in energy efficiency. The Act also included language to extend the state's Illinois Energy Infrastructure Modernization Act which gives Ameren Illinois the ability to continue investing in modernizing its electric distribution system while seeking recovery under a formula ratemaking process. Ameren is investing in transmission system improvements to ensure that we will be able to provide reliable, safe service now and in the future. Ameren Missouri initiated the Quantum Weather program to pinpoint severe weather activity on a localized basis. Ameren addressed fuel supply disruption risks via implementation of new fuel inventory policies and the development of alternative delivery options at many of its facilities. Over the next five years (2019-2023) Ameren plans to invest over \$2.4 billion in transmission system improvements to ensure that we will be able to provide reliable and safe service.

Cost of management

2,400,000,000

Comment

Service interruptions can occur due to failures of equipment as a result of severe or destructive weather or other causes.

The ability of Ameren Missouri and Ameren Illinois to respond promptly to such failures can affect customer satisfaction.

If customers, legislators, or regulators have or develop a negative opinion of us and our utility services, this could result

in increased costs associated with regulatory oversight and could affect the returns on common equity we are allowed to earn. Additionally, negative opinions about us could make it more difficult for our utilities to achieve favorable legislative or regulatory outcomes. Negative opinions could also result in increased use of distributed generation by our customers. Any of these consequences could adversely affect our results of

operations, financial position, and liquidity.

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Customer

Risk type

Transition risk

Primary climate-related risk driver

Reputation: Shifts in consumer preferences

Type of financial impact

Reduced revenue from decreased demand for goods/services

Company- specific description

Changes in consumer behavior could impact the consumption of electricity and natural gas in our service territory. Consumers could implement life style changes due to climate change as well as a response to higher electricity and natural gas costs. Customers could also install more customer owned renewable generation. This could result in decreased electric sales.

Energy conservation, energy efficiency, distributed generation, energy storage, and other factors that reduce energy demand could adversely affect Ameren's results of operations, financial position, and liquidity. Without a regulatory mechanism to ensure recovery, declines in energy usage will result in an under-recovery of Ameren Missouri's revenue requirement.

Time horizon

Medium-term

Likelihood

About as likely as not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

700,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

It is likely that the price of electricity could increase as a result of climate-related regulations. Increased cost could impact customer consumption levels thereby impacting financial performance. Increased levels of bad debt expense from higher prices may also negatively impact Ameren if the cost recovery through rates is inadequate. Lower revenues could place limits on the availability of credit which would affect Ameren's ability to finance activities associated with climate change.

The potential financial impact represents the combined energy efficiency program spend over the life of the current approved programs (a total of approximately \$700,000,000 investment).

Management method

Ameren is committed to its role as a leader in providing a secure energy future for our customers. It is imperative that future business plans continue to be prudent and in the best interests of our customers. There is a risk that customer satisfaction levels will decrease as a result of higher rates due to increased costs associated with actions taken to address climate change. Ameren is taking steps to reduce the risks related to poor recovery mechanisms and customer bad debt expense. Ameren Illinois implemented bad debt riders for both electric and natural gas businesses that guarantee recovery of bad debt expenses and mitigate exposure to consumer bad debt associated with increased costs. Ameren Illinois rate structure was modified in 2017 pursuant to the Future Energy Job Act to mitigate exposure to variations in consumer consumption levels. Ameren's Risk Management Department has in place policies to address fuel price volatility. As the provisions of any final climate legislation/regulation become known, Ameren's risk management department will review those policies to ensure they will be sufficient to address any fuel price volatility that may arise. Robust policies and processes exist to allow Ameren management to review and approve each offset or allowance financial hedge that may be executed. Caps or limits on specific transactions may be implemented to diversify the portfolio of hedges to minimize the negative financial impact associated with any single hedge/ offsets.

Cost of management

700,000,000

Comment

In September 2017, the Illinois Commerce Commission approved Ameren Illinois' energy-efficiency savings targets and investments for the 2018 through 2021 period. The plan is designed to save an average of 342 million kilowatthours (kWhs) annually at an average capital cost of \$99 million per year resulting in over 1.36 billion kWhs saved over the four-year period. The plan is designed to save 3.36 million therms of natural gas annually at an average operating cost of \$16 million per year resulting in savings of 13.4 million therms over the four-year period. The plan reaches all customer segments.

In December 2018, Ameren Missouri's MEEIA 2019 plan was approved. The plan includes a portfolio of customer energy-efficiency programs through December 2021 and low-income customer energy-efficiency programs through December 2024, along with a regulatory recovery mechanism. Ameren Missouri intends to invest \$226 million over the life of the plan.

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Opp1

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of lower-emission sources of energy

Type of financial impact

Returns on investment in low-emission technology

Company-specific description

The 2017 Integrated Resource Plan (IRP) is designed to ensure that customers' long-term electric energy needs are met in a reliable, cost-effective and environmentally responsible manner. Ameren's preferred plan focuses on transitioning the generation fleet to a cleaner and more fuel diverse energy portfolio in a responsible manner and includes: the addition of at least 700 MW of wind generation by 2020 (representing and investment of approximately \$1.0 billion); the addition of 100 MW of solar generation by 2025; the planned retirement of more than half of Ameren Missouri's coal-fired generation capacity over the next twenty years; continuation of cost-effective customer energy-efficiency programs; and continued development of smart grid, communications and other advanced technologies. Ameren Missouri has a goal to reduce CO2 emissions 35% by 2030, 50% by 2040, and 80% by 2050 compared to 2005 levels.

Time horizon

Short-term

Likelihood

About as likely as not

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

1,000,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Ameren could generate additional earnings if plant investments are made and these investments receive proper rate treatment. If new regulations cause retirement of less efficient generating plants, Ameren's more efficient generation may benefit from additional sales and increased market prices. In addition, with more renewable resources Ameren can provide additional services and increase revenues. Currently, 16% of our revenues and earnings come from carbon emitting resources.

The potential financial impact represents Ameren Missouri pursuing ownership of at least 700 MW of wind generation by 2020 (representing an investment of approximately \$1.0 billion) with multiple wind developers.

Strategy to realize opportunity

Executing our strategy-Proposed Wind Investment. The 2017 Integrated Resource Plan (IRP) is designed to ensure that customers' long-term electric energy needs are met in a reliable, cost-effective and environmentally responsible manner. Ameren's preferred plan focuses on transitioning the generation fleet to a cleaner and more fuel diverse energy portfolio in a responsible manner and includes: the addition of at least 700 MW of wind generation by 2020 (representing an investment of approximately \$1.0 billion); the addition of 100 MW of solar generation by 2027; the planned retirement of more than half of Ameren Missouri's coal-fired generation capacity over the next twenty years; continuation of cost-effective customer energy-efficiency programs; and continued development of smart grid, communications and other advanced technologies. Ameren Missouri has a goal to reduce CO2 emissions 35% by 2030, 50% by 2040, and 80% by 2050 compared to 2005 levels.

Cost to realize opportunity

1,000,000,000

Comment

Ameren is advancing its commitment to environmental stewardship through Ameren Missouri's 20-year Integrated Resource Plan (IRP), issued in September 2017. The IRP outlines plans to significantly increase our renewable energy portfolio. It also includes the planned retirement of more than half of Ameren Missouri'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. More information is available at AmerenMissouri.com/IRP.

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resilience

Primary climate-related opportunity driver

Other

Type of financial impact

Increased market valuation through resilience planning (e.g., infrastructure, land, buildings)

Company-specific description

At year-end 2018, electric and gas transmission and distribution investments comprised 73% of Ameren's regulated infrastructure rate base, a good proxy for Ameren's earnings power, while fossil fuel-fired generation investments comprised only 16% of rate base. These percentages reflect our strategic allocation of increasing amounts of capital to distribution and transmission businesses and our view that the energy grid will be increasingly important and valuable to our customers, the communities we serve and our shareholders. This value is expected to be driven by the need for a smarter, more hardened grid to incorporate increasingly more distributed and renewable generation sources. Further, we expect the percent of rate base represented by fossil fuel-fired generation investments to decline in the years ahead as we focus on transmission and distribution investments and our announced preferred plan to increase renewable generation investments.

Time horizon

Current

Likelihood

About as likely as not

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

2,400,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

At year-end 2018, electric and gas transmission and distribution investments comprised 73% of Ameren's regulated infrastructure rate base, a good proxy for Ameren's earnings power, while fossil fuel-fired generation investments comprised only 16% of rate base. These percentages reflect our strategic allocation of increasing amounts of capital to distribution and transmission businesses. This value is expected to be driven by the need for a smarter, more hardened grid to incorporate increasingly more distributed and renewable generation sources.

The potential financial impact represents the total investment in transmission infrastructure over the next five years (2019-2023) to ensure system reliability. It reflects the inherent value of reliable service through the deployment of cost-effective investments in infrastructure equipment as approved through MISO's Transmission Expansion Planning (MTEP) process.

Strategy to realize opportunity

Over the next five years (2019-2023) Ameren plans to invest over \$2.4 billion in transmission system improvements to ensure that we will be able to provide reliable, safe service now and in the future. There is a strong long-term infrastructure investment pipeline beyond 2023.

Cost to realize opportunity

2,400,000,000

Comment

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.

Over the next five years (2019-2023) Ameren plans to invest over \$2.4 billion in transmission system improvements to ensure that we will be able to provide reliable, safe service now and in the future. There is a strong long-term infrastructure investment pipeline beyond 2023.

Identifier

Opp3

Where in the value chain does the opportunity occur?

Customer

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Type of financial impact

Better competitive position to reflect shifting consumer preferences, resulting in increased revenues

Company-specific description

To educate and help customers become more efficient users of energy, Ameren Missouri and Ameren Illinois have implemented robust energy-efficiency programs. In Missouri, the Missouri Energy Efficiency Investment Act (MEEIA) established a regulatory framework that, among other things, allows electric utilities to recover costs (both program costs and margin reductions resulting from energy-efficiency programs) related to MoPSC-approved customer energy-efficiency programs. In February 2016, the MoPSC approved Ameren Missouri's MEEIA 2016 plan with its intended investment of \$158 million and energy savings goal of 570,000 MWhs. This plan, which runs from March 2016 through February 2019, includes residential customer energy-efficiency programs ranging from traditional heating and cooling rebates to structured efforts aimed at changing customer energy behaviors. Business customer programs can cover any project that cost-effectively saves energy.

Illinois law requires Ameren Illinois to offer customer energy-efficiency programs. In September 2017, the Illinois Commerce Commission approved Ameren Illinois' energy-efficiency savings targets and investments for the 2018 through 2021 period. The Commission-approved plan is designed to save an average of 342 million kilowatthours (kWhs) annually at an average capital cost of \$99 million per year resulting in over 1.36 billion kWhs saved over the four-year period. Additionally, the plan is designed to save 3.36 million therms of natural gas annually at an average operating cost of \$16 million per year resulting in savings of 13.4 million therms over the four-year period. The plan reaches all customer segments with a strong focus on and significant budget allocations for serving low and moderate income residential customers. Programs for residential customers include traditional heating, cooling, lighting and insulation rebates. Business customers may receive incentives for any equipment or improvement that cost-effectively saves energy. The electric energy-efficiency program investments and the return on those investments are collected from customers through a rate rider, as are

the operating costs of the natural gas energy-efficiency programs.

Time horizon

Current

Likelihood

About as likely as not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

700,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Ameren is committed to providing a secure energy future for our customers. It is imperative that future business plan strategies continue to be prudent and in the best interest of our customers.

In December 2018, Ameren Missouri's MEEIA 2019 plan was approved. The plan includes a portfolio of customer energy-efficiency programs through December 2021 and low-income customer energy-efficiency programs through December 2024, along with a regulatory recovery mechanism

The potential financial impact represents the combined energy efficiency program spend over the life of the current approved programs (a total of approximately \$700,000,000 investment).

Strategy to realize opportunity

In Missouri, the Missouri Energy Efficiency Investment Act (MEEIA) established a regulatory framework that, among other things, allows electric utilities to recover costs (both program costs and margin reductions resulting from energy-efficiency programs) related to MoPSC-approved customer energy-efficiency programs. In February 2016, the MoPSC approved Ameren Missouri's MEEIA 2016 plan with its intended investment of \$158 million and energy savings goal of 570,000 MWhs. This plan ran from March 2016 through February 2019.

State law requires Ameren Illinois to offer customer energy-efficiency programs. In September 2017, the Illinois Commerce Commission approved Ameren Illinois' energy-efficiency savings targets and investments for the 2018 through 2021 period. The

Commission-approved plan is designed to save an average of 342 million kilowatthours (kWhs) annually at an average capital cost of \$99 million per year resulting in over 1.36 billion kWhs saved over the four-year period. Additionally, the plan is designed to save 3.36 million therms of natural gas annually at an average operating cost of \$16 million per year resulting in savings of 13.4 million therms over the four-year period. The plan reaches all customer segments. The electric energy-efficiency program investments and the return on those investments are collected from customers through a rate rider, as are the operating costs of the natural gas energy-efficiency programs.

Cost to realize opportunity

700,000,000

Comment

In September 2017, the Illinois Commerce Commission approved Ameren Illinois' energy-efficiency savings targets and investments for the 2018 through 2021 period. The plan is designed to save an average of 342 million kilowatthours (kWhs) annually at an average capital cost of \$99 million per year resulting in over 1.36 billion kWhs saved over the four-year period. The plan is designed to save 3.36 million therms of natural gas annually at an average operating cost of \$16 million per year resulting in savings of 13.4 million therms over the four-year period. The plan reaches all customer segments.

In December 2018, Ameren Missouri's MEEIA 2019 plan was approved. The plan includes a portfolio of customer energy-efficiency programs through December 2021 and low-income customer energy-efficiency programs through December 2024, along with a regulatory recovery mechanism. Ameren Missouri intends to invest \$226 million over the life of the plan.

C2.5

(C2.5) Describe where and how the identified risks and opportunities have impacted your business.

	Impact	Description
Products and services	Impacted	<p>Ameren has a corporate process for identifying significant risks and opportunities that allow our business to make prudent decisions while meeting our customers' energy needs in a safe, reliable, efficient and environmentally responsible manner, including climate-related risks. Ameren develops action plans that mitigate risk, manage long-term customer costs and improve shareholder value.</p> <p>Magnitude of impact: The five year planning horizon (2019-2023) directs significant investments to transmission and distribution systems (\$2.4 billion) and non-carbon emitting generation. Investments in transmission and distribution allow systems to be more efficient and provide access to renewable resources. The following initiatives are part of the solution: energy efficiency programs, optimizing operations at our energy centers;</p>

		<p>planned retirement of existing coal-fired generation and installation of new low/ zero-emitting generation, and acquiring hybrid bucket trucks, natural gas fuel trucks and electric vehicles. Ameren Illinois joined with energy stakeholders in supporting the Future Energy Jobs Act. Ameren Illinois increased its investments in energy efficiency in 2017. The law also extend the state’s landmark Illinois Energy Infrastructure Modernization Act that gives Ameren Illinois the ability to continue modernizing its electric distribution system while seeking recovery under a formula ratemaking process.</p> <p>The 2017 Ameren Missouri Integrated Resource Plan (IRP) is designed to ensure that customers’ long-term electric energy needs are met in a reliable, cost-effective and environmentally responsible manner.</p> <p>Ameren’s preferred plan focuses on transitioning the generation fleet to a cleaner and more fuel diverse energy portfolio in a responsible manner and includes: the addition of at least 700 MW of wind generation by 2020 (representing and investment of approximately \$1.0 billion); the addition of 100 MW of solar generation by 2027; the planned retirement of more than half of Ameren Missouri’s coal-fired generation capacity over the next twenty years; continuation of cost-effective customer energy-efficiency programs; and continued development of smart grid, communications and other advanced technologies. Ameren Missouri has a goal to reduce CO2 emissions 35% by 2030, 50% by 2040, and 80% by 2050 compared to 2005 levels.</p>
Supply chain and/or value chain	Not impacted	<p>Ameren’s Market Risk Management Department has in place polices to address fuel price volatility and supply chain risks. As the provisions of any final climate-related legislation/regulation become known, Ameren’s risk management department reviews those polices to ensure that the polices will be sufficient to address any fuel price volatility that may arise. Robust policies and processes exist to allow Ameren management to review and approve each offset or allowance financial hedge that may be executed. Caps or limits on specific transactions may be implemented to diversify the portfolio of hedges to minimize the negative financial impact associated with any single hedge investment or offset project.</p> <p>Ameren has not yet been impacted by the breakdown in our supply chain as a result of climate change.</p>
Adaptation and mitigation activities	Impacted	<p>Changes in weather patterns, impacting temperatures and precipitation, could significantly impact customer load patterns. These effects may increase or decrease the volume of electric sales and natural gas usage. In particular, the warming of the climate could increase electricity sales and reduce natural gas sales for heating load. This could result in increases or decreases in revenues for Ameren, depending on the level of warming. It also could reduce energy production from hydroelectric, wind, and solar renewable resources. It could also impact reliability and</p>

		<p>increase customer cost.</p> <p>Induced changes in natural resources may include low water levels in rivers; warmer water in rivers due to lower flow and higher ambient temperatures, reduced water quality due to low flows and higher ambient temperatures; increased flooding events along rivers; and longer growing seasons with increased vegetation. Changes that resulted in flooding could potentially impact transmission systems, distribution systems and substations. This could potentially cause system failure which may result in additional requirements for hardening of the system. Longer growing seasons could result in increased vegetation that could potentially interfere with transmission and distribution lines.</p> <p>Magnitude of impact:</p> <p>Over the next five years (2019-2023) Ameren plans to invest over \$2.4 billion in transmission system improvements to ensure that we will be able to provide reliable, safe service now and in the future.</p>
Investment in R&D	Impacted	<p>Ameren invested in research for alternative forms of generation. In 2018, Ameren spent over \$1.25 million for CO2 emissions reduction research, including the Electric Power Research Institute (EPRI) Electrification Assessments, Energy Sustainability Interest Group, Sustainability Benchmarking Project, Distributed Energy Resource projects, and Grid Modernization Programs. In addition to EPRI activities, Ameren participated in the Missouri S&T Intelligent Systems Center and the Gas Technology Institute Emerging Technology Program.</p> <p>In 2017, Ameren announced the launch of Ameren Accelerator, an innovative public-private partnership with the University of Missouri System, UMSL Accelerate and Capital Innovators, that assesses, mentors and invests in energy technology startup companies. The unique partnership, one of the first of its kind in the United States, is also the St. Louis region's first to focus on energy technologies. Leveraging the expertise of all of the partners, the goals of this program are to better position Ameren to meet its customers' future energy needs and expectations, create new jobs through these start-up companies and provide university students opportunities to be more engaged in the energy business. Ameren has also invested in Energy Impact Partners, a fund focused on strategic investments in high-growth companies involved in new energy technologies.</p>
Operations	Impacted	<p>Ameren has a corporate process for identifying significant risks and opportunities that allow our business to make prudent decisions while meeting our customers' energy needs in a safe, reliable, efficient and environmentally responsible manner, including climate-related risks. Ameren develops action plans that mitigate risk, manage long-term customer costs and improve shareholder value. As of December 31,</p>

		<p>2018, Ameren Missouri's fossil fuel-fired energy centers represented 16% of Ameren's rate base. The five year planning horizon (2019-2023) directs significant investments to transmission and distribution systems and non-carbon emitting generation. Investments in transmission and distribution allow systems to be more efficient and provide access to renewable resources. The following initiatives are part of the solution: energy efficiency programs, optimizing operations at our energy centers; evaluating the potential retirement of existing coal-fired generation and new renewable generation, and acquiring hybrid bucket trucks, natural gas fuel trucks and electric vehicles. Ameren Illinois joined with energy stakeholders in supporting the Future Energy Jobs Act which extended the state's landmark Illinois Energy Infrastructure Modernization Act Law that gives Ameren Illinois the ability to continue modernizing its electric distribution system while seeking recovery under a formula ratemaking process. Ameren Illinois increased its investments in energy efficiency in 2018. Ameren Missouri's preferred plan based on the 2017 Integrated Resource Plan focuses on transitioning the generation fleet to a cleaner and more fuel diverse energy portfolio in a responsible manner and includes: the addition of at least 700 MW of wind generation by 2020 (representing an investment of approximately \$1.0 billion); the addition of 100 MW of solar generation by 2027; the planned retirement of more than half of Ameren Missouri's coal-fired generation capacity over the next twenty years; continuation of cost-effective customer energy-efficiency programs; and continued development of smart grid, communications and other advanced technologies. Ameren Missouri has a goal to reduce CO2 emissions 35% by 2030, 50% by 2040, and 80% by 2050 compared to 2005 levels.</p>
Other, please specify		

C2.6

(C2.6) Describe where and how the identified risks and opportunities have been factored into your financial planning process.

	Relevance	Description
Revenues	Impacted	<p>Revenues are factored into Ameren's financial planning and risk management processes and are regularly considered.</p> <p>Over the next five years (2019-2023) Ameren plans to invest over \$2.4 billion in transmission system improvements to ensure that we will be able to provide reliable, safe service now and in the future. For example, Ameren and Ameren Illinois may not realize the expected return on their electric transmission investments, which could adversely affect their results of operations, financial position,</p>

		<p>and liquidity. Ameren, through ATXI and Ameren Illinois, is investing significant capital resources in electric transmission. These investments are based on the Federal Energy Regulatory Commission (FERC's) regulatory framework and a rate of return on common equity that is currently higher than that allowed by our state commissions. However, the FERC regulatory framework and rate of return are subject to change including change as a result of existing and future third-party complaints and challenges at the FERC and the new methodology for determining the base return on common equity proposed by the FERC in November 2018. Accordingly, the regulatory framework may be less favorable or the rate of return may be lower in the future, compared with the current regulatory environment and rate of return, all of which may adversely affect Ameren's and Ameren Illinois' results of operations, financial position, and liquidity. A pending complaint case filed with the FERC in February 2015 could reduce the allowed return on common equity and could require customer refunds. A 50 basis point reduction in the FERC-allowed return on common equity would reduce Ameren's and Ameren Illinois' earnings by an estimated \$9 million and \$5 million, respectively, based on each company's 2019 projected rate base.</p> <p>For more information see Ameren's 2018 Annual Report on Form 10-K for the year ended December 31, 2018.</p>
Operating costs	Impacted	<p>Projected operating costs are factored into Ameren's financial planning and risk management processes and are regularly considered.</p> <p>For example, the construction and acquisition of, and capital improvements to, electric and natural gas utility infrastructure involve substantial risks. These risks include escalating costs, unsatisfactory performance by the projects when completed, the inability to complete projects as scheduled, cost disallowances by regulators, and the inability to earn an adequate return on invested capital, any of which could result in higher costs and facility closures.</p> <p>We expect to make significant capital expenditures to maintain and improve our electric and natural gas utility infrastructure and to comply with existing environmental regulations. We estimate that we will invest up to \$13.9 billion (Ameren Missouri – up to \$7.1 billion; Ameren Illinois – up to \$6.6 billion; ATXI – up to \$0.2 billion) of capital expenditures from 2019 through 2023. These estimates include allowance for equity funds used during construction, but do not include any additional wind generation investments (approximately \$1.0 billion in capital investment) by</p>

		<p>Ameren Missouri beyond the two facilities that Ameren Missouri has agreed to acquire after construction. Investments in Ameren's rate-regulated operations are expected to be recoverable from customers, but they are subject to prudence reviews and are exposed to regulatory lag of varying degrees by jurisdiction.</p> <p>For more information see Ameren's 2018 Annual Report on Form 10-K for the year ended December 31, 2018.</p>
Capital expenditures / capital allocation	Impacted	<p>Capital expenditures/capital allocation are factored into Ameren's financial planning and risk management processes and are regularly considered.</p> <p>For example, the construction and acquisition of, and capital improvements to, electric and natural gas utility infrastructure involve substantial risks. These risks include escalating costs, unsatisfactory performance by the projects when completed, the inability to complete projects as scheduled, cost disallowances by regulators, and the inability to earn an adequate return on invested capital, any of which could result in higher costs and facility closures.</p> <p>We expect to make significant capital expenditures to maintain and improve our electric and natural gas utility infrastructure and to comply with existing environmental regulations. We estimate that we will invest up to \$13.9 billion (Ameren Missouri – up to \$7.1 billion; Ameren Illinois – up to \$6.6 billion; ATXI – up to \$0.2 billion) of capital expenditures from 2019 through 2023. These estimates include allowance for equity funds used during construction, but do not include any additional wind generation investments by Ameren Missouri beyond the two facilities that Ameren Missouri has agreed to acquire after construction. Investments in Ameren's rate-regulated operations are expected to be recoverable from customers, but they are subject to prudence reviews and are exposed to regulatory lag of varying degrees by jurisdiction.</p> <p>For more information see Ameren's 2018 Annual Report on Form 10-K for the year ended December 31, 2018.</p>
Acquisitions and divestments	Not yet impacted	<p>In 2018, Ameren did not make any acquisitions or divestments. The strategic planning activities in this area are highly confidential.</p>
Access to capital	Impacted	<p>Access to capital is factored into Ameren's financial planning and risk management processes and is regularly considered.</p>

		<p>Our businesses are dependent on our ability to access the capital markets successfully. We might not have access to sufficient capital in the amounts and at the times needed.</p> <p>We rely on the issuance of short-term and long-term debt as significant sources of liquidity and funding for capital requirements not satisfied by our operating cash flow, as well as to refinance existing long-term debt. The inability to raise debt or equity capital at reasonable terms, or at all, could negatively affect our ability to maintain and to expand our businesses. Events beyond our control, such as depressed economic conditions or extreme volatility in the debt, equity, or credit markets, might create uncertainty that could increase our cost of capital or impair or eliminate our ability to access the debt, equity, or credit markets, including our ability to draw on bank credit facilities. Any adverse change in our credit ratings could reduce access to capital and trigger collateral postings and prepayments. Such changes could also increase the cost of borrowing and the costs of fuel, power, and natural gas supply, among other things, which could adversely affect our results of operations, financial position, and liquidity.</p> <p>For more information see Ameren's 2018 Annual Report on Form 10-K for the year ended December 31, 2018.</p>
Assets	Impacted	<p>Existing assets are factored into Ameren's financial planning and risk management processes and are regularly considered.</p> <p>For example, significant portions of our electric generation, transmission, and distribution facilities and natural gas transmission and distribution facilities are aging. This aging infrastructure may require significant additional maintenance or replacement that could adversely affect our results of operations, financial position, and liquidity. Additionally, Ameren Missouri's results of operations, financial position, and liquidity could be adversely affected if an energy center's costs or decommissioning costs associated with an energy center's retirement are not fully recovered. Our aging infrastructure may pose risks to system reliability and expose us to expedited or unplanned significant capital expenditures and operating costs. Aging transmission and distribution facilities are more prone to failure than new facilities, which results in higher maintenance expense and the need to replace these facilities with new infrastructure. Even if the system is properly maintained, its reliability may ultimately deteriorate and negatively affect our ability to serve our customers, which could result in increased costs associated with regulatory oversight. For Ameren Illinois, the frequency and duration of customer outages are</p>

		<p>among the Illinois Energy Infrastructure Modernization Act performance standards. Any failure to achieve these standards will result in a reduction in Ameren Illinois' allowed return on equity on electric distribution assets. It is difficult to quantify the potential impact to our assets.</p> <p>We expect to make significant capital expenditures to maintain and improve our electric and natural gas utility infrastructure and to comply with existing environmental regulations. We estimate that we will invest up to \$13.9 billion (Ameren Missouri – up to \$7.1 billion; Ameren Illinois – up to \$6.6 billion; ATXI – up to \$0.2 billion) of capital expenditures from 2019 through 2023.</p> <p>For more information see Ameren's 2018 Annual Report on Form 10-K for the year ended December 31, 2018.</p>
Liabilities	Impacted	<p>Liabilities are factored into Ameren's financial planning and risk management processes and are regularly considered.</p> <p>For example, we are subject to various environmental laws. Significant capital expenditures are required to achieve and to maintain compliance with these environmental laws. Failure to comply with these laws could result in the closing of facilities, alterations to the manner in which these facilities operate, increased operating costs, or exposure to fines and liabilities.</p> <p>We are subject to various environmental laws, including statutes and regulations, enforced by federal, state, and local authorities. The development and operation of electric generation, transmission, and distribution facilities and natural gas storage, transmission, and distribution facilities can trigger compliance obligations with respect to environmental laws. These laws address emissions, discharges to water, water intake, impacts to air, land, and water, and chemical and waste handling. Complex and lengthy processes are required to obtain and renew approvals, permits, and licenses for new, existing or modified facilities. Additionally, the use and handling of various chemicals or hazardous materials require release prevention plans and emergency response procedures. Ameren is also subject to risks from changing or conflicting interpretations of existing laws. It is difficult to quantify the potential liabilities. The 2017 Ameren Missouri Integrated Resource Plan identified a cost projection of approximately \$0.7 billion to comply with existing environmental regulations.</p> <p>For more information see Ameren's 2018 Annual Report on Form 10-</p>

		K for the year ended December 31, 2018.
Other		

C3. Business Strategy

C3.1

(C3.1) Are climate-related issues integrated into your business strategy?

Yes

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform your business strategy?

Yes, qualitative and quantitative

C-AC3.1b/C-CE3.1b/C-CH3.1b/C-CO3.1b/C-EU3.1b/C-FB3.1b/C-MM3.1b/C-OG3.1b/C-PF3.1b/C-ST3.1b/C-TO3.1b/C-TS3.1b

(C-AC3.1b/C-CE3.1b/C-CH3.1b/C-CO3.1b/C-EU3.1b/C-FB3.1b/C-MM3.1b/C-OG3.1b/C-PF3.1b/C-ST3.1b/C-TO3.1b/C-TS3.1b) Indicate whether your organization has developed a low-carbon transition plan to support the long-term business strategy.

Yes

C3.1c

(C3.1c) Explain how climate-related issues are integrated into your business objectives and strategy.

We recognize that climate change is a critical issue for our customers, our communities, our nation and our planet, and we are committed to do our part to protect and preserve the environment. The Company is taking steps to manage our climate-related risks – including policy and legal, physical, reputational and financial risks – while continuing to meet our obligation to provide safe, reliable and affordable energy to serve our customers.

In 2018, Ameren created the Corporate Social Responsibility (CSR) department to lead efforts on ESG, climate-related issues and shareholder advocacy efforts. Additionally in 2018, Ameren created a CSR Executive Steering Committee to lead 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.

Our strategy to address and respond to climate risk and opportunities requires us to evaluate all aspects of our electric, natural gas and transmission businesses. The primary sources of Ameren's Greenhouse Gas (GHG) emissions are Ameren Missouri's fossil-fueled energy centers. Smaller amounts of GHG emissions can also be attributed to our natural gas and electric delivery operations. As a result, we are taking actions across all parts of the business as we address the potential impacts of climate change and strive to reduce our GHG emissions significantly. Specifically, our strategy addresses:

- **Electricity Generation.** We are transitioning our generation fleet to cleaner resources, as set forth in Ameren Missouri's 2017 Integrated Resource Plan (IRP or "plan"). This plan is consistent with achieving our goal of an 80 percent reduction in GHG emissions by 2050, as compared to 2005 levels.
- **Electric Transmission.** We are expanding and enhancing our electric transmission grid to integrate additional clean, renewable energy resources while reducing energy losses and improving system reliability.
- **Electric Grid.** We are modernizing the electric grid to accommodate more energy from renewable sources, strengthen our system to be more resilient to climate change and weather-related events, and improve efficiency and reliability, as well as to enable our customers to have greater control over their energy use, both in terms of how much they use and when they use it.
- **Energy Efficiency.** We are implementing expanded programs that incentivize customers to reduce their energy consumption because the cleanest energy is the energy that is never used.
- **Other Non-Energy Center Emissions.** We are promoting customer programs related to renewable energy and electrification of transportation and other end-use applications, installing advanced street lighting and reducing methane leakage on our natural gas distribution system.

Our strategy for addressing climate risk, which is largely embedded in our IRP, is expected to deliver significant reductions in carbon emissions, while effectively balancing customer costs and reliability, and managing policy and legal, physical, reputational and financial risks.

Ameren's preferred plan focuses on transitioning the generation fleet to a cleaner and more fuel diverse energy portfolio in a responsible manner and includes: the addition of at least 700 MW of wind generation by 2020 (representing and investment of approximately \$1.0 billion); the addition of 100 MW of solar generation by 2027; a 160% increase in renewable generation capability over current levels; the planned retirement of more than half of Ameren Missouri's coal-fired generation capacity over the next twenty years; continuation of cost-effective customer energy-efficiency programs; and continued development of smart grid, communications and other advanced technologies. Ameren expects the percent of its rate base represented by fossil fuel-fired generation investments to decline in the years ahead as it focuses on increased grid and renewable generation investment. In addition, Ameren Missouri has a goal to reduce CO₂ emissions 35% by 2030, 50% by 2040, and 80% by 2050 compared to 2005 levels.

To test the resilience of our IRP, we compared our expected emission reductions under that plan to the emissions pathways recently analyzed by EPRI. These emissions pathways, which represent estimated global annual CO₂ emissions levels over a given period of time, included over 1,000 emissions pathways published by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body that assesses the science related to climate change. As

discussed in greater detail in the Scenario Analysis section of this Report, our projected CO₂ emissions are consistent with limiting global temperature rise to 2 degrees Celsius (2°C). Further, we have flexibility in our plan to meet more stringent emissions constraints, keeping in mind that adjusting the plan to achieve greater emissions reductions may increase customer costs and/or reduce reliability. Our plan transitions our generation fleet to a cleaner and more diverse portfolio over time.

By year end of 2023, we estimate our rate base will include 76% from electric and natural gas transmission and distribution investments with coal generation declining to 11%. These percentages reflect our strategic allocation of increasing amounts of capital to distribution and transmission businesses and our view that the energy grid will be increasingly important and valuable to our customers, the communities we serve and our shareholders. This value is expected to be driven by the need for a smarter, more hardened grid to incorporate increasingly more distributed and renewable generation sources. We expect the percent of rate base represented by fossil fuel-fired generation investments to decline in the years ahead as we focus on transmission and distribution investments and our announced preferred plan to increase renewable generation investments.

We strongly believe that Ameren’s strategy to address climate-change risk effectively balances and addresses the key climate-change risks described previously and positions Ameren to deliver long-term value to its customers, the communities we serve and shareholders. As the climate-change risk landscape continues to evolve, so too will our pursuit of advanced technological solutions, as well as policies and related investments that will support a cleaner energy future, including efficient electrification, distributed energy resources, smart grid technologies, energy efficiency, and demand response programs. Looking ahead, we will continue to work collaboratively with key stakeholders to address climate-change risks in a responsible manner and deliver a brighter energy future for our customers, our communities and our country.

C3.1d

(C3.1d) Provide details of your organization’s use of climate-related scenario analysis.

Climate-related scenarios	Details
2DS Nationally determined contributions (NDCs)	<p>To help us 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 by an individual company or organization.</p> <p>Much of EPRI’s study builds on the scenario results released by the IPCC in its Fifth Assessment Report, in which over 1,000 scenarios were placed into one of seven categories according to their probabilities of limiting increases in global</p>

average temperature to less than 2°C. Each category includes a range of emissions pathways, which represent projected global annual CO2 emissions levels over a given period of time, along with a range of probability of staying below 2°C. EPRI focused much of its analysis on those climate scenarios contained in the two IPCC categories that exhibited the highest probability of achieving a 2°C goal. To provide proper context for a review of Ameren Missouri's IRP, we calculated Ameren's pro-rata share of emissions for the global electric sector scenarios from the EPRI analysis using Ameren's share of 2005 emissions. This allows us to compare the emission reductions associated with our plan to the emissions pathways represented in the scenario analysis data used by EPRI. Comparing the IRP against those scenarios that exhibit a high probability of achieving a 2°C goal, we found that the projected CO2 emissions under our current plan fall well within the range of the emissions defined by these scenarios. We expected these results because our current plan was tailored to be consistent with meeting a 2°C goal, as outlined in the Paris Agreement, and includes significant levels of renewable energy, EE, fossil fuel unit retirements and electrification.

While our current plan to reduce CO2 emissions 35% by 2030, 50% by 2040, and 80% by 2050 compared to 2005 levels is consistent with and supports a 2°C goal, as outlined in the Paris Agreement, we recognize there are efforts to limit the temperature increase even further, such as to 1.5°C.

Should a more aggressive approach to climate-change policy result in more stringent emission-reduction requirements, we believe that our current plan provides sufficient flexibility to meet these additional constraints. This flexibility owes to our favorable position with regard to long-term generating capacity needs. Because our need for new generating capacity will occur well into the future, we are able to monitor changes in technology and market conditions before committing to significant investments in new generation resources. We will continue to monitor technology advances that may present economically feasible and cleaner solutions in our ongoing effort to reduce GHG emissions.

Our current plan represents a balanced and cost-effective approach to meet the long-term energy needs of our customers and address the needs and expectations of our other key stakeholders. Further, we have flexibility in our plan to meet more stringent emissions constraints. While adjusting the plan to achieve greater emissions reductions may increase customer costs and/or reduce reliability, having flexibility allows us to better manage and mitigate these potential impacts. Under any climate policy, we will continue to work closely with regulators and other key stakeholders to balance the needs of all stakeholders and to reduce the potential for stranded costs related to current and future investments.

Learn more from our 2019 Building a Cleaner Energy Future Report available under the ESG section of AmerenInvestors.com.

C-AC3.1e/C-CE3.1e/C-CH3.1e/C-CO3.1e/C-EU3.1e/C-FB3.1e/C-MM3.1e/C-OG3.1e/C-PF3.1e/C-ST3.1e/C-TO3.1e/C-TS3.1e

(C-AC3.1e/C-CE3.1e/C-CH3.1e/C-CO3.1e/C-EU3.1e/C-FB3.1e/C-MM3.1e/C-OG3.1e/C-PF3.1e/C-ST3.1e/C-TO3.1e/C-TS3.1e) Disclose details of your organization's low-carbon transition plan.

At Ameren, we are committed to operating in a sustainable manner and we are doing this by carefully balancing our key responsibilities to: our customers and the communities; our co-workers; our shareholders; and the environment. Ameren is focused on ensuring that its corporate governance practices protect and enhance long-term shareholder value. Reflecting its balanced approach to sustainability, Ameren's commitment to strong corporate governance includes policies and principles that integrate environmental, social and governance matters into the Company's broader risk management and strategic planning initiatives. Highlights from our low-carbon transition plan include transitioning the generation fleet to a cleaner and more fuel diverse energy portfolio in a responsible fashion; energy-efficiency programs; and electric and gas transmission and distribution investments.

The 2017 Integrated Resource Plan (IRP) is designed to ensure that customers' long-term electric energy needs are met in a reliable, cost-effective and environmentally responsible manner. Ameren's preferred plan focuses on transitioning the generation fleet to a cleaner and more fuel diverse energy portfolio in a responsible manner and includes: the addition of at least 700 MW of wind generation by 2020 (representing and investment of approximately \$1.0 billion); the addition of 100 MW of solar generation by 2027; the planned retirement of more than half of Ameren Missouri's coal-fired generation capacity; continuation of cost-effective customer energy-efficiency programs; and continued development of smart grid, communications and other advanced technologies. Ameren expects the percent of its rate base represented by fossil fuel-fired generation investments to decline in the years ahead as it focuses on increased grid and renewable generation investment. In addition, Ameren Missouri has a goal to reduce CO₂ emissions 35% by 2030, 50% by 2040, and 80% by 2050 compared to 2005 levels.

State law requires Ameren Illinois to offer customer energy-efficiency programs. In Sept. 2017, the Illinois Commerce Commission approved Ameren Illinois' energy-efficiency savings targets and investments for the 2018 through 2021 period. The plan is designed to save an average of 342 million kilowatthours (kWhs) annually at an average capital cost of \$99 million per year resulting in over 1.36 billion kWhs saved over the four-year period. Additionally, the plan is designed to save 3.36 million therms of natural gas annually at an average operating cost of \$16 million per year resulting in savings of 13.4 million therms over the four-year period. The plan reaches all customer segments with a strong focus on and significant budget allocations

for serving low and moderate income residential customers. Programs for residential customers include traditional heating, cooling, lighting and insulation rebates. Business customers may receive incentives for any equipment or improvement that cost-effectively saves energy. The electric energy-efficiency program investments and the return on those investments are collected from customers through a rate rider, as are the operating costs of the natural gas energy-efficiency programs.

The Missouri Energy Efficiency Investment Act (MEEIA) established a regulatory framework that, among other things, allows electric utilities to recover costs (both program costs and margin reductions resulting from energy-efficiency programs) related to customer energy-efficiency programs. In Feb. 2016, Ameren Missouri's MEEIA 2016 plan was approved with its intended investment of \$158 million and energy savings goal of 570,000 MWhs (Mar. 2016 through Feb. 2019). In Dec. 2018, Ameren Missouri's MEEIA 2019 plan was approved. The plan includes a portfolio of customer energy-efficiency programs through Dec. 2021 and low-income customer energy-efficiency programs through Dec. 2024, along with a regulatory recovery mechanism. Ameren Missouri intends to invest \$226 million over the life of the plan.

At year-end 2018, electric and gas transmission and distribution investments comprised 73% of Ameren's regulated infrastructure rate base, a good proxy for Ameren's earnings power, while fossil fuel-fired generation investments comprised only 16% of rate base. These percentages reflect our strategic allocation of increasing amounts of capital to distribution and transmission businesses and our view that the energy grid will be increasingly important and valuable to our customers, the communities we serve and our shareholders. This value is expected to be driven by the need for a smarter, more hardened grid to incorporate increasingly more distributed and renewable generation sources. Further, we expect the percent of rate base represented by fossil fuel-fired generation investments to decline in the years ahead as we focus on transmission and distribution investments and our recently announced preferred plan to increase renewable generation investments.

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

Absolute target

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number

Abs 1

Scope

Scope 1

% emissions in Scope

1

Targeted % reduction from base year

1

Base year

2017

Start year

2018

Base year emissions covered by target (metric tons CO₂e)

30,200,376

Target year

2018

Is this a science-based target?

No, and we do not anticipate setting one in the next 2 years

% of target achieved

100

Target status

Achieved

Please explain

Ameren Missouri Energy Efficiency Electric Programs 03/01/2016-02/28/2019.
2018 Savings Target: 204 GWh (approximately 161,300 metric tons of CO₂, assuming CO₂ emission factor of 0.73 metric ton/MWh and adjusting for line losses)
2018 Savings Actual: 362.5 GWh (approximately 286,400 metric tons of CO₂, assuming CO₂ emission factor of 0.73 metric ton/MWh and adjusting for line losses)
Exceeded 2018 savings target by approximately 77%.

Target reference number

Abs 2

Scope

Scope 1

% emissions in Scope

1

Targeted % reduction from base year

1

Base year

2017

Start year

2018

Base year emissions covered by target (metric tons CO₂e)

30,200,376

Target year

2018

Is this a science-based target?

No, and we do not anticipate setting one in the next 2 years

% of target achieved

100

Target status

Achieved

Please explain

Ameren Illinois Energy Efficiency Electric Programs (Planning Year: 01/01/18-12/31/18)
Savings Target: 358 GWh (approximately 282,900 metric tons of CO₂, assuming CO₂ emission factor of 0.73 metric ton/MWh and adjusting for line losses).
2018 Savings Actual: 381 GWh (approximately 301,100 metric tons of CO₂, assuming CO₂ emission factor of 0.73 metric ton/MWh and adjusting for line losses)
Exceeded 2018 savings target by approximately 6%.

Target reference number

Abs 3

Scope

Scope 1

% emissions in Scope

1

Targeted % reduction from base year

1

Base year

2017

Start year

2018

Base year emissions covered by target (metric tons CO₂e)

30,200,376

Target year

2018

Is this a science-based target?

No, and we do not anticipate setting one in the next 2 years

% of target achieved

100

Target status

Achieved

Please explain

Ameren Illinois Energy Efficiency Natural Gas Programs (Planning Year: 1/1/2018 – 12/31/18)

2018 Savings Target: 3,716,492 therms (approximately 19,700 metric tons of CO₂)

2018 Savings Actual: 7,353,769 therms (approximately 39,000 metric tons of CO₂)

Exceeded 2018 savings target by approximately 98%.

Target reference number

Abs 4

Scope

Scope 1

% emissions in Scope

100

Targeted % reduction from base year

35

Base year

2005

Start year

2018

Base year emissions covered by target (metric tons CO₂e)

35,754,207

Target year

2030

Is this a science-based target?

Yes, we consider this a science-based target, but this target has not been approved as science-based by the Science-Based Targets initiative

% of target achieved

Target status

Underway

Please explain

Ameren Missouri 2017 Integrated Resource Plan (IRP). The 2017 IRP is designed to ensure that customers' long-term electric energy needs are met in a reliable, cost-effective and environmentally responsible manner. Ameren's preferred plan focuses on transitioning the generation fleet to a cleaner and more fuel diverse energy portfolio in a responsible manner and includes: the addition of at least 700 MW of wind generation by 2020 (representing and investment of approximately \$1.0 billion); the addition of 100 MW of solar generation by 2027; a 160% increase in renewable generation capability over current levels; the planned retirement of more than half of Ameren Missouri's coal-fired generation capacity; continuation of cost-effective customer energy-efficiency programs; and continued development of smart grid, communications and other advanced technologies. Ameren expects the percent of its rate base represented by fossil fuel-fired generation investments to decline in the years ahead as it focuses on increased grid and renewable generation investment. In addition, Ameren Missouri has a goal to reduce CO2 emissions 35% by 2030, 50% by 2040, and 80% by 2050 compared to 2005 levels. The 2005 base year reported is CO2 not CO2e.

The target is underway.

Target reference number

Abs 5

Scope

Scope 1

% emissions in Scope

100

Targeted % reduction from base year

50

Base year

2005

Start year

2018

Base year emissions covered by target (metric tons CO2e)

35,754,207

Target year

2040

Is this a science-based target?

Yes, we consider this a science-based target, but this target has not been approved as science-based by the Science-Based Targets initiative

% of target achieved

Target status

Underway

Please explain

Ameren Missouri 2017 Integrated Resource Plan (IRP). The 2017 IRP is designed to ensure that customers' long-term electric energy needs are met in a reliable, cost-effective and environmentally responsible manner. Ameren's preferred plan focuses on transitioning the generation fleet to a cleaner and more fuel diverse energy portfolio in a responsible manner and includes: the addition of at least 700 MW of wind generation by 2020 (representing and investment of approximately \$1.0 billion); the addition of 100 MW of solar generation by 2027; a 160% increase in renewable generation capability over current levels; the planned retirement of more than half of Ameren Missouri's coal-fired generation capacity; continuation of cost-effective customer energy-efficiency programs; and continued development of smart grid, communications and other advanced technologies. Ameren expects the percent of its rate base represented by fossil fuel-fired generation investments to decline in the years ahead as it focuses on increased grid and renewable generation investment. In addition, Ameren Missouri has a goal to reduce CO2 emissions 35% by 2030, 50% by 2040, and 80% by 2050 compared to 2005 levels. The 2005 base year reported is CO2 not CO2e.

The target is underway.

Target reference number

Abs 6

Scope

Scope 1

% emissions in Scope

100

Targeted % reduction from base year

80

Base year

2005

Start year

2018

Base year emissions covered by target (metric tons CO2e)

35,754,207

Target year

2050

Is this a science-based target?

Yes, we consider this a science-based target, but this target has not been approved as science-based by the Science-Based Targets initiative

% of target achieved

Target status

Underway

Please explain

Ameren Missouri 2017 Integrated Resource Plan (IRP). The 2017 IRP is designed to ensure that customers' long-term electric energy needs are met in a reliable, cost-effective and environmentally responsible manner. Ameren's preferred plan focuses on transitioning the generation fleet to a cleaner and more fuel diverse energy portfolio in a responsible manner and includes: the addition of at least 700 MW of wind generation by 2020 (representing and investment of approximately \$1.0 billion); the addition of 100 MW of solar generation by 2027; a 160% increase in renewable generation capability over current levels; the planned retirement of more than half of Ameren Missouri's coal-fired generation capacity; continuation of cost-effective customer energy-efficiency programs; and continued development of smart grid, communications and other advanced technologies. Ameren expects the percent of its rate base represented by fossil fuel-fired generation investments to decline in the years ahead as it focuses on increased grid and renewable generation investment. In addition, Ameren Missouri has a goal to reduce CO2 emissions 35% by 2030, 50% by 2040, and 80% by 2050 compared to 2005 levels. The 2005 base year reported is CO2 not CO2e.

The target is underway.

C4.2

(C4.2) Provide details of other key climate-related targets not already reported in question C4.1/a/b.

Target

Other, please specify
Renewable Energy Credits-Missouri

KPI – Metric numerator

Megawatt hours

KPI – Metric denominator (intensity targets only)

Not Applicable

Base year

2018

Start year

2018

Target year

2018

KPI in baseline year

3,369,958

KPI in target year

3,369,958

% achieved in reporting year

100

Target Status

Achieved

Please explain

The 2018 Missouri Renewable Energy Standard requirement was 3,369,958 10% of the total retail electric sales of 33,699,583 MWh for 2018. REC's generated in previous years, through the banking provision in the law, from solar, wind, landfill gas, and hydroelectric (Keokuk Energy Center) were used to meet compliance.

Part of emissions target

Not Applicable

Is this target part of an overarching initiative?

Other, please specify
Renewable Energy Standard - Missouri

Target

Other, please specify
Renewable Energy Credits - Illinois

KPI – Metric numerator

Megawatt hours

KPI – Metric denominator (intensity targets only)

Not Applicable

Base year

2018

Start year

2018

Target year

2018

KPI in baseline year

713,352

KPI in target year

713,352

% achieved in reporting year

100

Target Status

Achieved

Please explain

2018 Ameren Illinois RECs: 713,352 MWhs. The Ameren Illinois customers on the Fixed Price BGS tariff were supplied a total of 7,227,325 MWh for calendar year 2018.

Part of emissions target

Not Applicable

Is this target part of an overarching initiative?

Other, please specify

Renewable Energy Credits – Illinois Renewable Portfolio Standard

C-OG4.2a

(C-OG4.2a) If you do not have a methane-specific emissions reduction target for your oil and gas activities or do not incorporate methane into your target(s) reported in C4.2 please explain why not and forecast how your methane emissions will change over the next five years.

Not applicable. Ameren is not in the oil & gas sector.

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	0	0
To be implemented*	0	0
Implementation commenced*	0	0
Implemented*	5	703,392
Not to be implemented	0	0

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative type

Energy efficiency: Processes

Description of initiative

Other, please specify

Ameren Energy Efficiency Programs

Estimated annual CO2e savings (metric tonnes CO2e)

628,500

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

17,833,000

Investment required (unit currency – as specified in C0.4)

182,000,000

Payback period

4 - 10 years

Estimated lifetime of the initiative

3-5 years

Comment

Energy efficiency programs are offered to our electric customers in both Missouri and Illinois. These help Ameren reduce exposure related to GHG's while improving our relationship with our customers. These energy efficiency programs include education programs, installation of efficient heating and air conditioning systems, home energy audits, low-income weatherization, programmable thermostat programs, and other residential and business programs. Ameren Missouri has an energy efficiency program that saved approximately 362,565 MWh (Jan. 2018-Dec. 2018) and avoided approx. 286,400 metric tons, assuming 0.73 metric tons of CO₂ per 1 MWh and adjusting for line losses. In 2018 Ameren Illinois saved 381,157 MWh and avoided approximately 301,100 metric tons, assuming 0.73 metric tons of CO₂ per 1 MWh and adjusting for line losses. Energy efficiency programs are offered to our natural gas customers in Illinois and Missouri. Ameren Illinois' program saved approx. 7.3 million therms in 2018 and avoided approximately 39,000 metric tons of customer CO₂, assuming 11.7 pounds of CO₂ per 1 therm. Ameren Missouri is actively engaged in implementing gas energy efficiency measures although there are no currently defined savings targets. Ameren Missouri saved approx. 372,000 therms in 2018 and avoided approx. 1,900 metric tons of customer CO₂, assuming 11.7 pounds of CO₂ per 1 therm. While these programs are voluntary there are earnings opportunities for implementing.

Initiative type

Energy efficiency: Building services

Description of initiative

Other, please specify

Lighting, heat pump, and HVAC upgrades

Estimated annual CO₂e savings (metric tonnes CO₂e)

251

Scope

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

6,274

Investment required (unit currency – as specified in C0.4)

1,300,000

Payback period

>25 years

Estimated lifetime of the initiative

Ongoing

Comment

Ameren has implemented various voluntary initiatives to improve efficiency and reduce GHG emissions at facilities dedicated to housing its personnel and operating equipment. These initiatives include replacing heating and cooling units and replacing fluorescent fixtures with energy efficient LED fixtures. Adjusting lighting levels to meet current standards, in facilities where applicable. In 2018, Ameren completed several energy efficiency projects that will reduce energy consumption by approximately 282,000 kWh annually and reduce our CO₂ emissions by 251 metric tons annually (assuming 0.73 metric tons of CO₂ per 1 MWh and adjusting for line losses). Ameren continues to promote and operate a single stream recycling program at operating centers and office buildings that will divert office waste from landfills. Ameren restored a building on campus that is now LEED certified (Leadership in Energy & Environmental Design) standards.

Initiative type

Process emissions reductions

Description of initiative

Other, please specify

Optimize operations at energy centers

Estimated annual CO₂e savings (metric tonnes CO₂e)

74,600

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

0

Investment required (unit currency – as specified in C0.4)

0

Payback period

Estimated lifetime of the initiative

16-20 years

Comment

Ameren Missouri implemented projects to optimize operations at our energy centers in 2018. Ameren Missouri is unable to calculate the savings from these investments.

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Compliance with regulatory requirements/standards	<p>The Missouri Renewable Energy Standard (MoRES) took effect in 2011. In 2018, Ameren purchased RECs and operated renewable facilities to comply with this standard. This included a 15-year wind power purchase agreement for 102 MWs of wind energy from Iowa; 15 MW (gross) of landfill gas generation which went operational in June 2012; operation of 5.7 MW (DC gross) of solar generation at the O'Fallon Renewable Energy Center; operation of 90 kW of solar generation at Ameren's headquarters; and an upgrade of existing hydroelectric facilities. In 2018, Ameren Missouri's non-solar generation requirement was 3,302,559 MWhs and was met by retiring RECs associated with generation from the Ameren Missouri Keokuk Energy Center, Maryland Heights Renewable Energy Center, and Pioneer Prairie wind farm, and banked solar RECs. Both Maryland Heights and the banked solar REC's were eligible for a 1.25 multiplier due to being Missouri based renewable generation. In 2018, the solar requirement was 67,399 MWhs and was met with S-RECs generated from Ameren Missouri customer installed solar and the O'Fallon Renewable Energy Center. In Illinois, Ameren Illinois continued to comply with the Illinois Renewable Portfolio Standard. Ameren Illinois purchased RECs to comply with its requirements as it has no renewable generation.</p> <p>Ameren Missouri 2017 Integrated Resource Plan (IRP). The 2017 IRP is designed to ensure that customers' long-term electric energy needs are met in a reliable, cost-effective and environmentally responsible manner. Ameren's preferred plan focuses on transitioning the generation fleet to a cleaner and more fuel diverse energy portfolio in a responsible manner. That portfolio includes the addition of more renewable generation, expansion of its energy efficiency programs, planned retirement of more than half of its coal fleet and implementation of advanced technologies. All of these investments and activities will achieve a reduction in CO2 emissions.</p>
Dedicated budget for energy efficiency	<p>Much of the technical and policy discussion related to climate change and a sustainable energy future focuses on energy efficiency. Ameren energy efficiency programs help reduce GHG emissions, lower the cost impact on the consumer, and improve our relationship with our customers. Ameren Illinois and Ameren Missouri programs spent approx. \$182 million on a number of energy efficiency programs in 2018 (electric and natural gas programs). Through these energy efficiency initiatives, Ameren estimates it avoided approx. 628,500 tons of CO2 in 2018. Through Ameren's automated meter reading</p>

	<p>capabilities in Missouri and Illinois, Ameren is able to provide customer information through the Manage My Energy analysis tools to allow customers to more completely understand and better manage their energy consumption. In December 2014, Ameren Missouri filed another three-year energy efficiency plan (2016-2018). The plan featured a budget of \$158 million, expanded programs, energy savings of 571 GWh and 167 MW of demand savings. In December 2018, Ameren Missouri's MEEIA 2019 plan was approved. The plan includes a portfolio of customer energy-efficiency programs through December 2021 and low-income customer energy-efficiency programs through December 2024, along with a regulatory recovery mechanism. Ameren Missouri intends to invest \$226 million over the life of the plan.</p> <p>In 2018, Ameren Illinois spent an additional \$118 million on energy efficiency programs. Through these energy efficiency initiatives, Ameren Illinois estimates it avoided 340,100 metric tons of CO2. In September 2017, the Illinois Commerce Commission approved Ameren Illinois' energy-efficiency savings targets and investments for the 2018 through 2021 period. The plan is designed to save an average of 342 million kWhs annually at an average capital cost of \$99 million per year resulting in over 1.36 billion kWhs saved over the four-year period. The plan is designed to save 3.36 million therms of natural gas annually at an average operating cost of \$16 million per year resulting in savings of 13.4 million therms over the four-year period.</p> <p>All of these programs are expected to reduce customer energy consumption and result in reduced CO2 emissions.</p>
<p>Dedicated budget for low-carbon product R&D</p>	<p>Ameren invested in research for alternative forms of generation. In 2018, Ameren spent over \$1.25 Million for CO2 emissions reduction and alternative energy generation R&D programs.</p> <p>In 2017, Ameren announced the launch of Ameren Accelerator, an innovative public-private partnership with the University of Missouri System, UMSL Accelerate and Capital Innovators, that will assess, mentor and invest in energy technology startup companies. The unique partnership, one of the first of its kind in the United States, is also the St. Louis region's first to focus on energy technologies. Leveraging the expertise of all of the partners, the goals of this program are to better position Ameren to meet its customers' future energy needs and expectations, create new jobs through these start-up companies and provide university students opportunities to be more engaged in the energy business.</p>
<p>Employee engagement</p>	<p>In 2018, Ameren created a Corporate Social Responsibility (CSR) Executive Steering Committee. The CSR Executive Steering</p>

	<p>Committee will lead Ameren's enterprise-wide social responsibility efforts. As a group of senior leaders, they will foster and advocate for a culture of sustainability among co-workers and suppliers that is consistent with Ameren's mission and vision. In 2010, Ameren created a CSR Council (formerly known as Corporate Sustainability Council) to research and recommend policies and improvement objectives, track our sustainable practices, develop ways to engage employees and stakeholders on the issues, and help guide Ameren to be more sustainable in the future. Ameren continues to promote and operate a single stream recycling program at operating centers and office buildings that will divert office waste from landfills. It is estimated to be a net neutral cost to the company. Ameren released its 2019 Corporate Social Responsibility Report in May 2019. This CSR report describes a variety of activities Ameren is doing to engage employees in achieving emission reduction activities at work, home and in the community.</p> <p>In 2019, Ameren developed and implemented a biodiversity policy.</p> <p>Ameren offered plug-in electric vehicle (EV) incentives to co-workers in 2018. Available incentives included \$2,500 for new EV purchases and \$1,500 for leased or used EV purchased.</p> <p>The goal is to inform employees to better manage their energy consumption.</p>
<p>Internal price on carbon</p>	<p>Ameren includes a carbon price in its evaluation of long-term resource planning for its Missouri regulated business through its Integrated Resource Plan (IRP) process (i.e., Scope 1 emissions from generation). The price is included to represent the expectation for either regulation of carbon dioxide emissions through a mechanism that establishes an explicit price for carbon dioxide emissions, such as a carbon tax or cap-and-trade program, or through voluntary emission credit trading markets established by RTO's or state or regional alliances. For its 2017 IRP, Ameren Missouri used a base and high scenario price of \$3.71 per short ton (\$3.37 per metric ton) starting in 2025 and escalating at approximately 12% per year. The prices used in the IRP process are established based on discussions with Company executives involved in environmental, regulatory and legislative activities. Establishment of the carbon price assumptions includes a review of price assumptions used or produced by other utilities, policy analysts, and government agencies, including the Social Cost of Carbon estimates used by the federal government. Ameren Missouri's 2017 IRP describes in detail the process used to establish carbon price assumptions for its evaluations at that time. The same general process continues to be used. Inclusion of a carbon price</p>

	affects Ameren Missouri’s evaluation of both new and existing generation resources, including potential retirement of fossil generation, and also increases the cost effectiveness of energy efficiency measures.
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C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation

Product

Description of product/Group of products

Pure Power voluntary renewable energy credit (REC) program for customers

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify

based on emission factors from eGRID

% revenue from low carbon product(s) in the reporting year

0

Comment

Ameren Missouri’s voluntary green program called Pure Power sold 63,033 RECs to customers in 2018. Since the start of the program in 2007, the RECs were retired on behalf of these customers with a potential reduction in over 566,000 metric tons of Scope 1 CO2 assuming 0.73 metric tons of CO2 per 1 MWh and adjusting for line losses.

Level of aggregation

Product

Description of product/Group of products

Ameren Missouri Solar Rebates

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify
based on emission factors from eGRID

% revenue from low carbon product(s) in the reporting year

0

Comment

In 2010, Ameren Missouri began to issue solar rebates to customers who install solar electric generating systems on their homes and businesses. By the end of 2018, Ameren Missouri had approximately 60 MWs of customer-installed private solar generation in its service territory. By generating emissions-free renewable energy at their homes and businesses, customers reduce the amount of energy they purchase from the utility. This has the potential to produce in excess of 77,000 MWh per year, avoiding over 56,000 metric tons of Scope 1 CO₂, assuming 0.73 metric tons of CO₂ per 1 MWh. The utility generates less energy and therefore lowers its GHG emissions, as a result of these systems.

Level of aggregation

Product

Description of product/Group of products

Ameren Missouri Energy Efficiency Program

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify
based on emission factors for eGRID

% revenue from low carbon product(s) in the reporting year

0

Comment

Changes in how our customers use electricity can reduce emissions through implementation of more efficient technologies or operations. Demand Side Management-Electricity Energy Efficiency programs are offered to our electricity

customers in both Missouri and Illinois. This provides opportunities for Ameren to implement energy efficiency programs that enable the achievement of climate goals and lower the impacts of climate costs to the consumer, improving our relationship with our customers. The energy efficiency programs include education programs, installation of energy efficient heating and air conditioning systems, home energy audits, low-income weatherization, programmable thermostat programs, and other residential and business programs. Ameren Missouri has an energy efficiency program approved through February 2019 that saved approximately 362,565 MWh and avoided approximately 286,400 metric tons of Scope 1 CO₂, assuming 0.73 metric tons of CO₂ per 1 MWh and adjusting for line losses in 2018.

Level of aggregation

Product

Description of product/Group of products

Ameren Illinois Energy Efficiency Program

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify
based on emission factors for eGRID

% revenue from low carbon product(s) in the reporting year

0

Comment

Ameren Illinois has an energy efficiency program approved through 2021 that in 2018 saved approximately 381,157 MWh and avoided approximately 301,100 metric tons of Scope 1 CO₂, assuming 0.73 metric tons of CO₂ per 1 MWh and adjusting for line losses in 2018.

Level of aggregation

Product

Description of product/Group of products

Ameren Natural Gas Energy Efficiency Program

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify
based on emission factors for eGRID

% revenue from low carbon product(s) in the reporting year

0

Comment

Demand Side Management-Natural Gas. Energy efficiency programs are offered to our natural gas customers in Illinois and Missouri. The natural gas energy efficiency programs provide incentives to customers when they purchase specific energy efficiency gas equipment, such as furnaces, boilers or manufacturing equipment. Ameren Illinois has a program approved through 2021. In 2018, it saved approximately 7,353,700 therms and avoided approximately 39,000 metric tons of Scope 1 CO₂, assuming 11.7 pounds of CO₂ per 1 therm. Ameren Missouri is engaged in implementing gas energy efficiency measures although there are no currently defined savings targets; however, in 2018 it saved about 372,700 therms and avoided approximately 1,900 metric tons of Scope 1 CO₂.

C-EU4.6

(C-EU4.6) Describe your organization's efforts to reduce methane emissions from your activities.

Ameren Missouri assets employ leak detection sensors throughout the generating units that operate using natural gas: Meramec Energy Center (Units 1&2) and Ameren Missouri Combustion Turbine Fleet. The leak detection sensors are utilized to monitor, alarm operators, and in some cases isolate methane leaks if/when they exist. Primarily these devices are utilized within turbine enclosure packages as well as specific applications where detection is employed in other areas such as our natural gas compression and cleaning systems in operation at the Maryland Height Renewable Energy Center (landfill gas to energy facility).

The 2017 Integrated Resource Plan (IRP) is designed to ensure that customers' long-term electric energy needs are met in a reliable, cost-effective and environmentally responsible manner. Ameren's preferred plan focuses on transitioning the generation fleet to a cleaner and more fuel diverse energy portfolio in a responsible manner. This transition will result in increased amounts of renewable generation and reduced amounts of fossil generation, which includes natural gas fuelled units. This should reduce methane emissions from our electric generation activities. One example is the retirement of the Meramec Energy Center which currently uses natural gas for Units 1&2. In addition, Ameren Missouri has a goal to reduce CO₂ emissions 35% by 2030, 50% by 2040, and 80% by 2050 from 2005 levels---including methane emission reductions.

Ameren has specific programs designed to reduce and eliminate methane emissions by building a smarter, more reliable delivery infrastructure. For example, since 2015, our Illinois and Missouri businesses have replaced over 175 miles of older, leak-prone, mechanically-coupled steel and older vintage polyethylene distribution gas mains and plan to replace an additional 235 miles of these gas mains over the next five years. These ongoing efforts will continue to reduce future methane emissions.

Delivery and transmission. Other GHGs, such as sulfur hexafluoride (SF6) and methane, are released on a much smaller scale through the process of delivering electricity and natural gas to customers' homes and businesses. SF6 is used as an insulator for transmission equipment, such as circuit breakers, and methane is the principal component in natural gas. Our investments in smarter, cleaner, and more efficient and reliable delivery and transmission technology will continue to reduce these kinds of emissions.

C-OG4.6

(C-OG4.6) Describe your organization's efforts to reduce methane emissions from your activities.

Not applicable. Ameren is not in the oil & gas sector.

COG4.7

(C-OG4.7) Does your organization conduct leak detection and repair (LDAR) or use other methods to find and fix fugitive methane emissions from oil and gas production activities?

No, this is not relevant to our operations

C-OG4.7b

(C-OG4.7b) Explain why you do not conduct LDAR or use other methods to find and fix fugitive methane emissions, and whether you have a plan to do so from your oil and gas production activities.

Not applicable. Ameren is not in the oil & gas sector.

C-OG4.8

(C-OG4.8) If flaring is relevant to your oil and gas production activities, describe your organization's efforts to reduce flaring, including any flaring reduction targets.

Not applicable. Ameren is not in the oil & gas sector.

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start

January 1, 2017

Base year end

December 31, 2017

Base year emissions (metric tons CO₂e)

30,200,376

Comment

Scope 1 emissions include: Ameren Missouri Generation, Ameren Missouri & Ameren Illinois Vehicle Fleet; Ameren Missouri equipment oil; propane usage, Ameren Illinois Natural Gas consumption for buildings; Ameren Illinois and Ameren Missouri electric distribution; and Ameren Illinois and Ameren Missouri natural gas supply.

Scope 2 (location-based)

Base year start

January 1, 2017

Base year end

December 31, 2017

Base year emissions (metric tons CO₂e)

68,388

Comment

Our Scope 2 emissions are the same for location-based and market-based. Scope 2 includes electricity usage at Ameren Illinois Buildings and our headquarters.

Scope 2 (market-based)

Base year start

January 1, 2017

Base year end

December 31, 2017

Base year emissions (metric tons CO₂e)

68,388

Comment

Our Scope 2 emissions are the same for location-based and market-based. Scope 2 includes electricity usage at Ameren Illinois Buildings and our headquarters.

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions.

US EPA Mandatory Greenhouse Gas Reporting Rule

Other, please specify

USEPA Clean Air Act Acid Rain Program

C5.2a

(C5.2a) Provide details of the standard, protocol, or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions.

USEPA Clean Air Act Acid Rain Program.

Ameren measures Scope 1 CO₂ emissions from its electric generation facilities by using continuous emission monitoring systems mandated by the USEPA under Title IV of the Clean Air Act. These monitors (using calibrated comparison gases) operate throughout the day, every day of the year, and are annually checked for accuracy. The CO₂ emissions from our electric generation facilities are estimated to account for more than 99% of the GHG emissions from our generation operations and more than 95% of the CO₂ emissions for the entire corporation.

Some of our generating units (predominantly oil-fired units) are considered by USEPA to be governed under Part 75 of the Clean Air Act as Low Mass Emitters, so their CO₂ emissions are conservatively determined using emission factors.

Emissions from our electric and natural gas distribution systems were determined using methods and values described in 40 CFR Part 98.

Emission factors for Greenhouse Gas Inventories from USEPA eGRID2016, February 2018 for SRMW (SERC Midwest) were used as needed.

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO₂e?

Reporting year

Gross global Scope 1 emissions (metric tons CO₂e)

29,587,976

Start date

January 1, 2018

End date

December 31, 2018

Comment

Scope 1 emissions include: Ameren Missouri Generation, Ameren Missouri & Ameren Illinois Vehicle Fleet; Ameren Missouri equipment oil; propane usage, Ameren Illinois Natural Gas consumption for buildings; Ameren Illinois and Ameren Missouri electric distribution; and Ameren Illinois and Ameren Missouri natural gas supply.

Past year 1

Gross global Scope 1 emissions (metric tons CO₂e)

Start date

End date

Comment

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We are reporting a Scope 2, market-based figure

Comment

Our Scope 2 emissions are the same for location-based and market-based.

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO₂e?

Reporting year

Scope 2, location-based

74,622

Scope 2, market-based (if applicable)

74,622

Start date

January 1, 2018

End date

December 31, 2018

Comment

Our Scope 2 emissions are the same for location-based and market-based. Scope 2 includes electricity usage at Ameren Illinois Buildings and our headquarters.

Past year 1

Scope 2, location-based

Scope 2, market-based (if applicable)

Start date

End date

Comment

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

Yes

C6.4a

(C6.4a) Provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure.

Source

All consumption at Ameren Missouri owned buildings with the exception of the General Office Building

Relevance of Scope 1 emissions from this source

Emissions are not evaluated

Relevance of location-based Scope 2 emissions from this source

Emissions are not evaluated

Relevance of market-based Scope 2 emissions from this source (if applicable)

Emissions are not evaluated

Explain why this source is excluded

There is no metering equipment installed at these facilities to estimate their electric and natural gas consumption to include in the Scope 1 and 2 emissions summary.

C6.5

(C6.5) Account for your organization's Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

78,454

Emissions calculation methodology

Emission Intensity Factor used from 2015 Corporate and Social Responsibility Report from Peabody Energy - primary fuel supplier

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

Method is using information from the primary source; however the Company derived the emission number based on the amount of coal purchased for our facilities and an estimate of the emission intensity factor using Peabody Energy data from 2015 Corporate and Social Responsibility Report (page 44)

Capital goods

Evaluation status

Relevant, not yet calculated

Explanation

Scope 3 emissions for capital goods is likely relevant. In 2018, Ameren did not calculate Scope 3 emissions for capital goods.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status

Relevant, not yet calculated

Explanation

Scope 3 emissions for fuel-and energy-related activities are likely relevant. In 2018, Ameren did not calculate Scope 3 emissions for fuel-and energy-related activities.

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

890,611

Emissions calculation methodology

Union Pacific Website - UP Carbon Emission estimator from rail delivery of coal

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Explanation

Method is from the primary source - Union Pacific; however the Company derived the emission number based on the number of train deliveries and estimated distance traveled for 2018.

Waste generated in operations

Evaluation status

Relevant, not yet calculated

Explanation

Scope 3 emissions for waste generated in operations are likely relevant. In 2018, Ameren did not calculate Scope 3 emissions for waste generated in operations.

Business travel

Evaluation status

Not relevant, calculated

Metric tonnes CO₂e

6,907

Emissions calculation methodology

Data provided by Enterprise Holdings for vehicle rentals made by Ameren. Personal vehicle emissions for company business calculated using emission factor from USEPA Emission Factors Nov. 2015, Table 9, Passenger Car.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

13

Explanation

Enterprise Holdings rental cars are a small portion (<20%) of total miles driven for company business. USEPA Table 9 is more representative of the types of personal vehicles used for company business.

Employee commuting

Evaluation status

Relevant, not yet calculated

Explanation

Scope 3 emissions for employee commuting are likely relevant. In 2018, Ameren did not calculate Scope 3 emissions for employee commuting.

Upstream leased assets

Evaluation status

Not evaluated

Explanation

Scope 3 emissions for upstream leased assets are not evaluated.

Downstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Explanation

Our product is delivered by wire or pipeline. Thus, there is no downstream issue. Actual emissions from these methods are captured in our Scope 1 emissions.

Processing of sold products

Evaluation status

Not relevant, explanation provided

Explanation

Ameren makes and delivers electricity and delivers natural gas to the ultimate consumers of these products. Thus, our products are not processed, they are simply consumed.

Use of sold products

Evaluation status

Relevant, not yet calculated

Explanation

Scope 3 emissions for use of sold products are likely relevant. In 2018, Ameren did not calculate Scope 3 emissions for use of sold products.

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Explanation

Our products, electricity and natural gas, are consumed and have no end of life issues.

Downstream leased assets

Evaluation status

Not evaluated

Explanation

Scope 3 emissions for downstream leased assets are not evaluated.

Franchises

Evaluation status

Not relevant, explanation provided

Explanation

We are required to deliver energy in our franchised service territory. Thus, it is a duplication of other items as we only delivery natural gas and electricity to ultimate customers in these franchised service territories.

Investments

Evaluation status

Not relevant, explanation provided

Explanation

Ameren makes investments in assets it will own. Thus, emissions will be captured in Scope 1 or Scope 2 after they enter service.

Other (upstream)

Evaluation status

Explanation

Other (downstream)

Evaluation status

Explanation

C6.7

(C6.7) Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

No

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO₂e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure

0.0047

Metric numerator (Gross global combined Scope 1 and 2 emissions)

29,662,598

Metric denominator

unit total revenue

Metric denominator: Unit total

6,291,000,000

Scope 2 figure used

Location-based

% change from previous year

3.8

Direction of change

Decreased

Reason for change

Electricity production was slightly higher in 2018 compared to 2017, revenues were also higher due to recovery of infrastructure investments made along with higher operating costs. Our 2018 CO₂e emissions were lower compared 2017. The result was a decrease in the intensity for 2018.

Intensity figure

0.64

Metric numerator (Gross global combined Scope 1 and 2 emissions)

29,662,598

Metric denominator

megawatt hour generated (MWh)

Metric denominator: Unit total

45,911,338

Scope 2 figure used

Location-based

% change from previous year

5.9

Direction of change

Decreased

Reason for change

Electricity production from fossil resources was slightly lower in 2018 compared to 2017. Our 2018 CO2e emission were lower compared 2017. This resulted in a decrease in the intensity for 2018.

C-OG6.12

(C-OG6.12) Provide the intensity figures for Scope 1 emissions (metric tons CO2e) per unit of hydrocarbon category.

C-OG6.13

(C-OG6.13) Report your methane emissions as percentages of natural gas and hydrocarbon production or throughput.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?

Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	29,202,885	Other, please specify <ul style="list-style-type: none"> Table A-1 in 40 CFR Part 98, Subpart A
CH4	195,428	Other, please specify <ul style="list-style-type: none"> Table A-1 in 40 CFR Part 98, Subpart A

N2O	144,786	Other, please specify ● Table A-1 in 40 CFR Part 98, Subpart A
SF6	44,877	Other, please specify ● Table A-1 in 40 CFR Part 98, Subpart A

C-EU7.1b

(C-EU7.1b) Break down your total gross global Scope 1 emissions from electric utilities value chain activities by greenhouse gas type.

	Gross Scope 1 CO2 emissions (metric tons CO2)	Gross Scope 1 methane emissions (metric tons CH4)	Gross Scope 1 SF6 emissions (metric tons SF6)	Gross Scope 1 emissions (metric tons CO2e)	Comment
Fugitives	0	0	2	44,877	2018 emissions from fugitive sources (SF6).
Combustion (Electric utilities)	29,159,704	3,338	0	29,387,854	2018 emissions from stationary combustion sources. CO2e includes CO2, CH4, and N2O emissions.
Combustion (Gas utilities)	1,355	4,477	0	113,273	2018 emissions from natural gas fugitive emissions. CO2e includes CO2 and CH4 emissions.
Combustion (Other)	41,825	2	0	41,971	2018 emissions from mobile sources.
Emissions not elsewhere classified	0	0	0	0	

C-OG7.1b

(C-OG7.1b) Break down your total gross global Scope 1 emissions from oil and gas value chain production activities by greenhouse gas type.

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
United States of America	29,587,976

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By business division

C7.3a

(C7.3a) Break down your total gross global Scope 1 emissions by business division.

Business division	Scope 1 emissions (metric ton CO2e)
Generation	29,372,582
Distribution	215,394

C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

	Gross Scope 1 emissions, metric tons CO2e	Comment
Electric utility generation activities	29,587,976	
Oil and gas production activities (upstream)		Not relevant. Ameren is not in the oil & gas sector.
Oil and gas production activities (downstream)		Not relevant. Ameren is not in the oil & gas sector.

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)
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United States of America	74,622	74,622	0	0
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C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By business division

C7.6a

(C7.6a) Break down your total gross global Scope 2 emissions by business division.

Business division	Scope 2, location-based emissions (metric tons CO2e)	Scope 2, market-based emissions (metric tons CO2e)
Ameren Illinois Company	51,831	51,831
Ameren Missouri Company	22,791	22,791

C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7

(C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7) Break down your organization's total gross global Scope 2 emissions by sector production activity in metric tons CO2e.

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Oil and gas production activities (upstream)			Not relevant. Ameren is not in the oil & gas sector.
Oil and gas production activities (downstream)			Not relevant. Ameren is not in the oil & gas sector.

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined) and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption				
Other emissions reduction activities				
Divestment				
Acquisitions				
Mergers				
Change in output	606,166	Decreased	2.1	Electricity production in 2018 was slightly higher than 2017. A total decrease of 606,166 tons CO2e compared to 2017; therefore, we calculated a decrease of 2.11.9% as follows: $(606,166 / 29,662,598) * 100 = 2.1\%$.
Change in methodology				
Change in boundary				
Change in physical operating conditions				
Unidentified				
Other				

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 30% but less than or equal to 35%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertakes this energy-related activity
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	1,311,136	44,322,549	45,633,685

Consumption of purchased or acquired electricity		277,658	0	277,658
Consumption of self-generated non-fuel renewable energy		0		0
Total energy consumption		1,588,789	44,322,549	45,911,338

C8.2b

(C8.2b) Select the applications of your organization’s consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	No
Consumption of fuel for the generation of steam	No
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Fuels (excluding feedstocks)

Subbituminous Coal

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

1,874,858

MWh fuel consumed for self-generation of electricity

32,381,542

MWh fuel consumed for self-generation of heat

0

Comment

Fuels (excluding feedstocks)

Fuel Oil Number 2

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

1,916

MWh fuel consumed for self-generation of electricity

4,380

MWh fuel consumed for self-generation of heat

0

Comment

Fuels (excluding feedstocks)

Natural Gas

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

33,318

MWh fuel consumed for self-generation of electricity

500,225

MWh fuel consumed for self-generation of heat

0

Comment

Fuels (excluding feedstocks)

Other, please specify

Propane

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

1

MWh fuel consumed for self-generation of electricity

1

MWh fuel consumed for self-generation of heat

0

Comment

C8.2d

(C8.2d) List the average emission factors of the fuels reported in C8.2c.

Fuel Oil Number 2

Emission factor

73.96

Unit

kg CO2 per million Btu

Emission factor source

Table C-1 to Subpart C of 40 CFR Part 98

Comment

Natural Gas

Emission factor

53.02

Unit

kg CO2 per million Btu

Emission factor source

Table C-1 to Subpart C of 40 CFR Part 98

Comment

Subbituminous Coal

Emission factor

97.02

Unit

kg CO2 per million Btu

Emission factor source

Table C-1 to Subpart C of 40 CFR Part 98

Comment

Other

Emission factor

62.87

Unit

kg CO2 per million Btu

Emission factor source

Table C-1 to Subpart C of 40 CFR Part 98

Comment

Other: Propane

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	45,911,338	2,832,464	1,588,789	1,588,789
Heat	0	0	0	0
Steam	0	0	0	0
Cooling	0	0	0	0

C-EU8.2e

(C-EU8.2e) For your electric utility activities, provide a breakdown of your total power plant capacity, generation, and related emissions during the reporting year by source.

Coal – hard

Nameplate capacity (MW)

5,379

Gross electricity generation (GWh)

32,381.54

Net electricity generation (GWh)

30,506.68

Absolute scope 1 emissions (metric tons CO₂e)

29,038,693

Scope 1 emissions intensity (metric tons CO₂e per GWh)

896.77

Comment

The 2018 reported values are based on units operating on coal at Labadie Energy Center; Meramec Energy Center (Units 3&4); Rush Island Energy Center; and Sioux Energy Center.

Emissions intensity based on gross generation.

Lignite

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO₂e)

0

Scope 1 emissions intensity (metric tons CO₂e per GWh)

0

Comment

Ameren does not have generating units that utilize lignite.

Oil

Nameplate capacity (MW)

312

Gross electricity generation (GWh)

4.38

Net electricity generation (GWh)

2.46

Absolute scope 1 emissions (metric tons CO₂e)

5,067

Scope 1 emissions intensity (metric tons CO₂e per GWh)

1,156.76

Comment

The 2018 reported values are based on units operating on oil at our energy centers.
Five units operate on oil.
Emissions intensity based on gross generation.

Gas

Nameplate capacity (MW)

3,761

Gross electricity generation (GWh)

500.22

Net electricity generation (GWh)

466.91

Absolute scope 1 emissions (metric tons CO₂e)

306,512

Scope 1 emissions intensity (metric tons CO₂e per GWh)

612.75

Comment

The 2018 reported values are based on units operating on natural gas at our energy centers. Ameren Missouri operates a fleet of nine natural gas-fired energy centers in Missouri and Illinois, including Meramec Energy Center (Units 1&2). Emissions intensity based on gross generation.

Biomass

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO₂e)

0

Scope 1 emissions intensity (metric tons CO₂e per GWh)

0

Comment

Ameren does not have generating units that utilize biomass.

Waste (non-biomass)

Nameplate capacity (MW)

15

Gross electricity generation (GWh)

41.26

Net electricity generation (GWh)

34.49

Absolute scope 1 emissions (metric tons CO₂e)

22,559

Scope 1 emissions intensity (metric tons CO₂e per GWh)

546.82

Comment

The 2018 reported values are based on our landfill gas energy center: Maryland Heights Renewable Energy Center. Added to Ameren Missouri's fleet in 2012, this renewable energy center captures an otherwise untapped resource—methane gas from a landfill—and uses it to create clean, reliable electricity.

This facility removes the siloxane, hydrogen sulfides and other non-hydrocarbons prior to combustion. Additionally, energy center equipment compresses and removes moisture from the previously wasted methane from decomposing trash at the adjacent Maryland Heights landfill.

Emissions intensity based on gross generation.

Nuclear

Nameplate capacity (MW)

1,236

Gross electricity generation (GWh)

11,127.68

Net electricity generation (GWh)

10,655.28

Absolute scope 1 emissions (metric tons CO₂e)

0

Scope 1 emissions intensity (metric tons CO₂e per GWh)

0

Comment

2018 data based on our Callaway Energy Center. Nuclear is a non-carbon emitting energy resource.

Geothermal

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Ameren does not have geothermal generating units.

Hydroelectric

Nameplate capacity (MW)

333

Gross electricity generation (GWh)

1,263.89

Net electricity generation (GWh)

1,250.73

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

The 2018 reported values are based on our hydroelectric generation resources: Keokuk Energy Center & Osage Energy Center. Hydroelectric power is a non-carbon emitting energy resource.

Wind

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

278

Net electricity generation (GWh)

278

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO₂e per GWh)

0

Comment

The 2018 reported values are based on Ameren Missouri's wind power purchase agreement. Wind is a non-carbon emitting energy resource.

Solar

Nameplate capacity (MW)

5.7

Gross electricity generation (GWh)

6

Net electricity generation (GWh)

6

Absolute scope 1 emissions (metric tons CO₂e)

0

Scope 1 emissions intensity (metric tons CO₂e per GWh)

0

Comment

The 2018 reported values are based on Ameren Missouri's O'Fallon Renewable Energy Center. This facility is one of Ameren Missouri's investments on behalf of customers for cleaner air and renewable energy. Solar is a non-carbon emitting energy resource.

Other renewable

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO₂e)

0

Scope 1 emissions intensity (metric tons CO₂e per GWh)

0

Comment

Ameren does not have other renewable generating units.

Other non-renewable

Nameplate capacity (MW)

408

Gross electricity generation (GWh)

308.72

Net electricity generation (GWh)

121.34

Absolute scope 1 emissions (metric tons CO₂e)

0

Scope 1 emissions intensity (metric tons CO₂e per GWh)

0

Comment

The 2018 reported values are based on Ameren Missouri's Taum Sauk Energy Center—a pumped hydroelectric energy center. The net generation includes energy input for pumping.

The generation less pumping energy is the reported net generation value. The reported net generation value is a negative value.

Total

Nameplate capacity (MW)

11,450

Gross electricity generation (GWh)

45,911

Net electricity generation (GWh)

43,078

Absolute scope 1 emissions (metric tons CO₂e)

29,372,831

Scope 1 emissions intensity (metric tons CO₂e per GWh)

639.77

Comment

The 2018 reported values are based on Ameren's generation.

Emissions intensity based on gross generation.

Ameren is advancing its commitment to environmental stewardship through Ameren Missouri's 20-year Integrated Resource Plan (IRP), issued in September 2017. The IRP outlines plans to significantly increase our renewable energy portfolio, including the addition of at least 700 MW megawatts of wind generation by 2020. It also includes the planned retirement of more than half of Ameren Missouri'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. Further, Ameren Missouri has a goal to reduce carbon dioxide (CO₂) emissions 35% by 2030, 50% by 2040 and 80% by 2050, as compared to the 2005 levels. More information is available at AmerenMissouri.com/IRP.

C8.2f

(C8.2f) Provide details on the electricity, heat, steam and/or cooling amounts that were accounted for at a low-carbon emission factor in the market-based Scope 2 figure reported in C6.3.

Basis for applying a low-carbon emission factor

No purchases or generation of low-carbon electricity, heat, steam or cooling accounted with a low-carbon emission factor

Low-carbon technology type

Region of consumption of low-carbon electricity, heat, steam or cooling

MWh consumed associated with low-carbon electricity, heat, steam or cooling

Emission factor (in units of metric tons CO₂e per MWh)

Comment

C-EU8.4

(C-EU8.4) Does your electric utility organization have a transmission and distribution business?

Yes

C-EU8.4a

(C-EU8.4a) Disclose the following information about your transmission and distribution business.

Country/Region

United States of America

Voltage level

Transmission (high voltage)

Annual load (GWh)

2,541

Scope 2 emissions (basis)

Location-based

Scope 2 emissions (metric tons CO2e)

2,268

Annual energy losses (% of annual load)

1

Length of network (km)

4,781

Number of connections

1,223,594

Area covered (km2)

52,576

Comment

Ameren Missouri transmission data reported. Connections based on the number of retail customers.

Country/Region

United States of America

Voltage level

Transmission (high voltage)

Annual load (GWh)

4,858

Scope 2 emissions (basis)

Location-based

Scope 2 emissions (metric tons CO2e)

4,335

Annual energy losses (% of annual load)

1

Length of network (km)

7,465

Number of connections

1,220,679

Area covered (km²)

113,182

Comment

Ameren Illinois transmission data reported. Connections based on the number of retail customers.

Ameren Illinois Transmission Company (ATXI) owns 408 miles of transmission lines not reflected in this table.

Country/Region

United States of America

Voltage level

Distribution (low voltage)

Annual load (GWh)

34,168

Scope 2 emissions (basis)

Location-based

Scope 2 emissions (metric tons CO₂e)

30,487

Annual energy losses (% of annual load)

6

Length of network (km)

53,940

Number of connections

1,223,594

Area covered (km²)

52,576

Comment

Ameren Missouri distribution data reported. Connections based on the number of customers.

Country/Region

United States of America

Voltage level

Distribution (low voltage)

Annual load (GWh)

31,799

Scope 2 emissions (basis)

Location-based

Scope 2 emissions (metric tons CO2e)

28,373

Annual energy losses (% of annual load)

4

Length of network (km)

73,833

Number of connections

1,220,679

Area covered (km2)

113,182

Comment

Ameren Illinois distribution data reported. Connections based on the number of customers.

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

C-EU9.5a

(C-EU9.5a) Break down, by source, your total planned CAPEX in your current CAPEX plan for power generation.

Primary power generation source	CAPEX planned for power generation from this source	Percentage of total CAPEX planned for power generation	End year of CAPEX plan	Comment
Wind	1,000,000,000	36	2023	Ameren is advancing its commitment to environmental stewardship through

			<p>Ameren Missouri's 20-year Integrated Resource Plan (IRP), issued in September 2017. The IRP outlines plans to significantly increase our renewable energy portfolio, including the addition of at least 700 MW of wind generation by 2020. It also includes the planned retirement of more than half of Ameren Missouri'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. Further, Ameren Missouri has a goal to reduce carbon dioxide (CO2) emissions 35% by 2030, 50% by 2040 and 80% by 2050, as compared to 2005 levels. More information is available at AmerenMissouri.com/IRP.</p> <p>The capital expenditures plan for power generation is based on the current 2019-2023 forecast.</p>
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C-EU9.5b

(C-EU9.5b) Break down your total planned CAPEX in your current CAPEX plan for products and services (e.g. smart grids, digitalization, etc.).

Products and services	Description of product/service	CAPEX planned for product/service	Percentage of total CAPEX planned products and services	End of year CAPEX plan
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C-CO9.6/C-EU9.6/C-OG9.6

(C-CO9.6/C-EU9.6/C-OG9.6) Disclose your investments in low-carbon research and development (R&D), equipment, products, and services.

Investment start date

January 1, 2018

Investment end date

December 31, 2018

Investment area

R&D

Technology area

Other, please specify
energy storage and other programs

Investment maturity

Applied research and development

Investment figure

1,250,000

Low-carbon investment percentage

0-20%

Please explain

Ameren invested in research for alternative forms of generation. In 2018, Ameren spent over \$1,250,000 for CO2 emissions reduction research, including the EPRI Electrification Portfolio Assessment, Social Cost of Carbon Project, Integration of Distributed Energy Program, Energy Sustainability Interest Group, Sustainability Benchmarking Project, Feasibility Study for Microgrids, Energy Storage Program, and Grid Modernization Program. In addition to EPRI activities, Ameren participated in the Missouri S&T Microgrid Consortium, The University of Illinois Distributed Generation Analysis, and the Gas Technology Institute Emerging Technology Program.

In 2017, Ameren announced the launch of Ameren Accelerator, an innovative public-private partnership with the University of Missouri System, UMSL Accelerate and Capital Innovators, that will assess, mentor and invest in energy technology startup companies. The unique partnership, one of the first of its kind in the United States, is also the St. Louis region's first to focus on energy technologies. Leveraging the expertise of all of the partners, the goals of this program are to better position Ameren to meet its customers' future energy needs and expectations, create new jobs through these start-up companies and provide university students opportunities to be more engaged in the energy business. We are unable to calculate the savings from these investments.

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	No third-party verification or assurance
Scope 3	No third-party verification or assurance

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 and/or Scope 2 emissions and attach the relevant statements.

Scope

Scope 1

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Not applicable

Attach the statement

 Ameren 2018 4th Qtr ECMPS Feedback Reports.pdf

Page/ section reference

Additional information provided on Ameren 2018 4th Quarter U. S. EPA's Emissions Collection and Monitoring Plan System (ECMPS) Feedback Reports

Relevant standard

Other, please specify

CEMS – Part 75 of Clean Air Act Ameren Missouri generating facilities are subject to mandatory Federal reporting under the Clean Air Act using certified continuous emission monitoring systems.

Proportion of reported emissions verified (%)

99

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?

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

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

No, and we do not anticipate being regulated in the next three years

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

C11.3

(C11.3) Does your organization use an internal price on carbon?

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price

Navigate GHG regulations
Stakeholder expectations
Stress test investments
Other, please specify
Ameren Missouri Integrated Resource Plan

GHG Scope

Scope 1

Application

The use of CO2 prices is applied to the ongoing costs for the Ameren Missouri. Specifically those generation facilities that burn coal and natural gas.

Actual price(s) used (Currency /metric ton)

3.37

Variance of price(s) used

Ameren includes a carbon price in its evaluation of long-term resource planning for its Missouri regulated business through its Integrated Resource Plan (IRP) process (i.e., Scope 1 emissions from generation). The price is included to represent the expectation for either regulation of carbon dioxide emissions through a mechanism that establishes

an explicit price for carbon dioxide emissions, such as a carbon tax or cap-and-trade program, or through voluntary emission credit trading markets established by RTOs or state or regional alliances. For its 2017 IRP, Ameren Missouri used a base and high scenario price of \$3.71 per short ton (\$3.37 per metric ton) starting in 2025 and escalating at approximately 12% per year. The prices used in the IRP process are established based on discussions with Company executives involved in environmental, regulatory and legislative activities. Establishment of the carbon price assumptions includes a review of price assumptions used or produced by other utilities, policy analysts, and government agencies, including the Social Cost of Carbon estimates used by the federal government. Ameren Missouri's 2017 IRP describes in detail the process used to establish carbon price assumptions for its evaluations at that time. The same general process continues to be used. Inclusion of a carbon price affects Ameren Missouri's evaluation of both new and existing generation resources, including potential retirement of fossil generation, and also increases the cost effectiveness of energy efficiency measures.

Type of internal carbon price

Other, please specify

Explicit Price

Impact & implication

The addition of an explicit price on CO₂ raises the cost of generation on carbon emitting generation sources and by implication the market value of wholesale electricity. This assumption provides a cost advantage for any resource that does not emit CO₂ to meet the utilities obligations to serve its customers.

Ameren includes a carbon price in its evaluation of long-term resource planning for its Missouri regulated business through its Integrated Resource Plan (IRP) process (i.e., Scope 1 emissions from generation). The price is included to represent the expectation for either regulation of carbon dioxide emissions through a mechanism that establishes an explicit price for carbon dioxide emissions, such as a carbon tax or cap-and-trade program, or through voluntary emission credit trading markets established by RTOs or state or regional alliances. For its 2017 IRP, Ameren Missouri used a base and high scenario price of \$3.71 per short ton (\$3.37 per metric ton) starting in 2025 and escalating at approximately 12% per year. The prices used in the IRP process are established based on discussions with Company executives involved in environmental, regulatory and legislative activities. Establishment of the carbon price assumptions includes a review of price assumptions used or produced by other utilities, policy analysts, and government agencies, including the Social Cost of Carbon estimates used by the federal government. Ameren Missouri's 2017 IRP describes in detail the process used to establish carbon price assumptions for its evaluations at that time. The same general process continues to be used. Inclusion of a carbon price affects Ameren Missouri's evaluation of both new and existing generation resources, including potential retirement of fossil generation, and also increases the cost effectiveness of energy efficiency measures.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers

Yes, our customers

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement

Information collection (understanding supplier behavior)

Details of engagement

Collect climate change and carbon information at least annually from suppliers

% of suppliers by number

57

% total procurement spend (direct and indirect)

75

% Scope 3 emissions as reported in C6.5

0

Rationale for the coverage of your engagement

Ameren is measuring and tracking information from our top 100 suppliers year over year in order to establish a baseline for sustainability targets among our supply base.

Impact of engagement, including measures of success

The survey provides an indication to our supply base that sustainability is an initiative that Ameren cares about. We will informally recognize our top supplier(s) from the 2019 survey results.

Comment

Ameren engages our suppliers through our involvement with the Electric Utility Sustainable Supply Chain Alliance (Alliance). In 2018, the Alliance sent a voluntary survey to its members top 100 suppliers to assess their commitment to sustainability (metrics include: reductions in GHG emissions, waste and water usage). This represents approximately 75% of Ameren's total 2018 supplier spend. Additional activities in 2017 included Ameren's participation in the development of "Commodity Documents" that provide sustainability guidance to suppliers on specific products (wood poles, transformers, wire, Investment Recovery, etc.). In 2017/2018, Ameren will improve its maturity level in multiple attributes of the Alliance's sustainability model. The

attributes are primarily in the area of incorporating sustainability in the supplier relationship management program for top tier suppliers.

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement

Education/information sharing

Details of engagement

Run an engagement campaign to education customers about your climate change performance and strategy

% of customers by number

50

% Scope 3 emissions as reported in C6.5

0

Please explain the rationale for selecting this group of customers and scope of engagement

Ameren is advancing its commitment to environmental stewardship through Ameren Missouri's 20-year Integrated Resource Plan (IRP), issued in September 2017. The IRP outlines plans to significantly increase our renewable energy portfolio, including the addition of at least 700 MW of wind generation by 2020. It also includes the planned retirement of more than half of Ameren Missouri'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. Further, Ameren Missouri has a goal to reduce CO2 emissions 35% by 2030, 50% by 2040 and 80% by 2050, as compared to the 2005 level. More information is available at AmerenMissouri.com/IRP.

Ameren utilized both owned communications channels and the media to announce a goal of reducing carbon emissions 80% by 2050. The goal was to reach all 1.2 million Ameren Missouri customers along with other stakeholders including regulators, shareholders and employees. We recognize that our customers may belong to numerous stakeholder groups. Engaging the media was the most efficient way to amplify our message and as a result it was able to reach far beyond what we would have been able to accomplish on our own. The engagement included numerous media interviews with local and nationally-based news organizations, a nationally-distributed press release and a revised website.

Impact of engagement, including measures of success

For Ameren-owned channels, including website and social media, we achieved more than 76,000 impressions with a potential reach of nearly 3,000,000. A majority of our

social media engagement is with customers who live in the St. Louis metro area in Missouri and Illinois.

The impressions through media channels were likely much higher as stories highlighting the carbon reduction goal appeared in print, online and were broadcast on television and radio across the state of Missouri. The combined television market audience is more than 1.8 million households. Newspaper subscriptions in those areas surpass 100,000 homes and the media outlet's combined Facebook followers are well beyond 2 million individuals. The story went beyond local outlets in the Ameren service territory. National media outlets reported on the goals as well. These numbers are approximate as media do not share specific data on their audiences.

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

- Direct engagement with policy makers
- Trade associations
- Funding research organizations

C12.3a

(C12.3a) On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Adaptation or resilience	Support	Ameren Missouri supported the "21st Century Grid Modernization and Security Act" legislation to modernize the regulatory process for electrical corporations to more closely align the interests of electrical corporations and customers they serve by: allowing for the imposition of earnings caps, rate caps, performance standards and other customer protections; providing a meaningful opportunity for electrical corporations to recover on a timely basis the actual, prudently incurred costs of providing reliable electric service; establishing policies that encourage investment in Missouri electrical infrastructure; and providing globally competitive	The 21st century grid modernization and security act creates a performance-based regulatory construct for electrical corporations that provides greater certainty to both customers and electrical corporations, and fosters the provision of reliable and affordable electric services for the benefit of customers. In addition, this will improve reliability and accelerate more efficient energy delivery systems and create opportunities for lower energy consumptions by customers and reduced line losses. In 2018, this bill was approved.

		electric power rates for energy intensive customers.	
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C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

No

C12.3d

(C12.3d) Do you publicly disclose a list of all research organizations that you fund?

Yes

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

Ameren and its subsidiaries, including Ameren Missouri and Ameren Illinois, communicate positions on climate and the environment to co-workers, industry peers, regulators and other stakeholders. The company's Corporate Social Responsibility/Sustainability group recently brought together a cross-functional team from across Ameren to produce the company's first report addressing climate risk "Building a Cleaner Energy Future". It is published on the company's website. The report is a clear articulation of the company's plans to address climate change. It includes building new clean energy sources and retiring old energy centers while setting explicit carbon reduction goals consistent with the objectives of the Paris Agreement. This climate report was shared in a number of forums, including engagement with relevant trade associations across the country. Ameren also has internal documents which clearly articulate positions on important issues, such as climate change, and how Ameren's plans and actions have been executed for the ultimate benefit of the company's customers and communities served. We establish and revise our positions as issues and regulations evolve and we continuously review and discuss positions through corporate executive and management briefings.

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication

In mainstream reports

Status

Complete

Attach the document

 Ameren-Corp.-2018-Annual-Report-(Final).pdf

Page/Section reference

Annual Report (pg 3-9)

Content elements

Governance
Strategy
Risks & opportunities
Emission targets

Comment

The Annual Report provides financial information and highlights the Company's CO2 goals.

Publication

Other, please specify
In voluntary communications, in line with TCFD recommendations

Status

Complete

Attach the document

 Ameren's Climate Risk Report -Building A Cleaner Energy Future.pdf

Page/Section reference

Ameren Corporation Climate Risk Report - Building a Cleaner Energy Future: Entire Report

Content elements

Governance
Strategy
Risks & opportunities
Emission targets

Comment

Ameren's Climate Risk Report – Building a Cleaner Energy Future. The report is a comprehensive look at the steps Ameren is taking to meet its obligation to provide safe, reliable and affordable energy in an environmentally responsible manner to its customers and the communities it serves while effectively balancing climate-related risks.

Publication

In other regulatory filings

Status

Complete

Attach the document

 Ameren Missouri 2017 Integrated Resource Plan - Executive Summary.pdf

Page/Section reference

2017 Ameren Missouri Integrated Resource Plan: Executive Summary

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets

Comment

Ameren Missouri Integrated Resource Plan. A 20-year plan that supports cleaner energy in Missouri, including major expansions of solar and wind power. The IRP, which is filed every three years, describes our preferred approach to meeting electric customers' projected long-term energy needs in a cost-effective fashion that maintains system reliability as we move to cleaner and more diverse sources of energy generation.

Publication

In voluntary sustainability report

Status

Complete

Attach the document

 Ameren Corporation 2019_CSR_Summary_Sheet.pdf

Page/Section reference

Ameren Corporation 2019 Corporate Social Responsibility (CSR) Report is available at AmerenCSR.com. Entire Report. Our 2019 CSR Report Summary Sheet is attached.

Content elements

Governance
Strategy

Risks & opportunities
Emissions figures
Emission targets

Comment

Our Corporate Social Responsibility Report describes the actions we are taking to improve the environment and the communities we serve. As you will see, our actions are consistent with one of Ameren's core values—stewardship—to leave it better.

Publication

In voluntary communications

Status

Complete

Attach the document

 Ameren-EEI-ESG-Sustainability-Template-Version-1-Sept.-2018-FINAL_With-Hyperlink_2.pdf

Page/Section reference

EEI ESG Sustainability Template – Version 1: Entire report

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

Ameren is participating in the EEI ESG/Sustainability Report, a voluntary industry initiative coordinated by the Edison Electric Institute (EEI), to provide electric industry investors with more uniform and consistent environmental, social, governance and sustainability-related (ESG/sustainability) metrics.

C14. Signoff

C-FI

(C-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.

C14.1

(C14.1) Provide details for the person that has signed off (approved) your CDP climate change response.

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

SC. Supply chain module

SC0.0

(SC0.0) If you would like to do so, please provide a separate introduction to this module.

SC0.1

(SC0.1) What is your company's annual revenue for the stated reporting period?

	Annual Revenue
Row 1	

SC0.2

(SC0.2) Do you have an ISIN for your company that you would be willing to share with CDP?

SC1.1

(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.

SC1.2

(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).

SC1.3

(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?

Allocation challenges	Please explain what would help you overcome these challenges
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SC1.4

(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?

SC2.1

(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.

SC2.2

(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?

SC3.1

(SC3.1) Do you want to enroll in the 2019-2020 CDP Action Exchange initiative?

SC3.2

(SC3.2) Is your company a participating supplier in CDP's 2018-2019 Action Exchange initiative?

SC4.1

(SC4.1) Are you providing product level data for your organization's goods or services?

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

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

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