

4. Existing Supply-side Resources

Highlights

- Ameren Missouri currently owns and operates 9,714 MW of supply-side resources: 3,355 MW of coal, 1,194 MW of nuclear, 2,742 MW of natural gas/oil, and 2,424 MW of renewables and storage.
- Since December 2024, Ameren Missouri has brought 900 MW of solar resources online and is advancing the construction of 1,600 MW of natural gas/oil generation resources and 400 MW of additional energy storage capacity.
- Ameren Missouri has assumed retirement of 217 MW (summer net capacity) of older, less efficient gas and oil-fired combustion turbine generators (CTGs) by the end of 2032, subject to unit-specific evaluations prior to a final decision to retire. Additionally, the Company will be retiring its Illinois CTGs by the end of 2039 due to legislation passed in Illinois in 2021, including retirement of the Venice Energy Center by the end of 2029.
- The baseline retirement dates for Ameren Missouri's coal-fired energy centers, consistent with the Company's 2025 Notice of Change in Preferred Plan, are as follows:
 - Sioux Energy Center retired by the end of 2031.
 - Two Labadie Energy Center Units retired by the end of 2036 and the remaining two units retired by the end of 2042.
 - Evaluation of alternate retirement dates is discussed in Chapter 9.

Ameren Missouri owns and operates solar, wind, coal-fired, natural gas-fired, nuclear, hydroelectric and storage energy centers to serve the energy needs of its customers. Ameren Missouri regularly evaluates energy center performance and executes projects that are necessary to operate its plants in an efficient, safe, cost-effective and environmentally friendly manner.

Ameren Missouri has recently completed Keokuk Energy Center upgrades to Units 2 and 4, which completes the upgrades for all 27 currently operating hydro units. This IRP's baseline assumptions include the retirement of all its coal-fired energy centers by the end of 2042, four older and less efficient CTG units by the end of 2032, and all its CTGs in Illinois by the end of 2039.

4.1 Existing Generation Portfolio¹

Table 4.1 shows the 2026 summer net capability of Ameren Missouri's existing supply-side resources along with accredited capacity for summer and winter for planning year

¹ 20 CSR 4240-22.040(1); 20 CSR 4240-22.040(2)

2026-2027. Appendix A shows a unit rating summary table, and Appendix B shows assumed existing unit accredited capacity by season for 2026-2046.

Table 4.1 Existing Supply-side Resource Installed Capacity

Existing Resource (MW)	Summer Net Capability*	Summer UCAP	Winter UCAP
Nuclear	1,194	1,151	1,194
Coal	3,355	2,952	3,019
Gas/Oil	2,742	2,605	1,738
Landfill Gas	9	8	10
Pumped Hydro	440	422	422
Hydro	384	378	378
Wind	699	32	78
Solar	922	351	168
Total	9,745	7,899	7,005

*Nameplate capacity shown for solar and wind resources

The UCAP values shown in Table 4.1 are values derived by Ameren Missouri. For thermal units, the Ameren Missouri rated capability is reduced by the expected forced outage rate for each resource. Wind and solar units are adjusted by seasonal DLOL values used for the PY2025-26 study by MISO for those facilities. This method was chosen to provide UCAP values that are more appropriate for the long-time horizon of the IRP and avoid the volatility inherent in MISO's approach to seasonal accreditation, which incorporates historical performance for selected hours and serves in part as a true-up mechanism for capacity market compensation. Because of the inclusion of very specific and recent historical performance and the resultant volatile nature of MISO accreditations, their use for dispatchable resources is not appropriate for long-term resource planning.

4.1.1 Existing Coal Resources

Ameren Missouri has two coal-fired energy centers in its generation fleet. The coal-fired units at our Labadie and Sioux Energy Centers have a total summer net generating capability of 3,355 MW.

Ameren Missouri has evaluated multiple projects and plans for complying with various EPA regulations that are currently being reconsidered by the current administration. A comprehensive discussion of environmental regulations and compliance can be found in Chapter 5 – Environmental Compliance.

Labadie Energy Center

Labadie Energy Center is located outside Labadie, Missouri, on more than 1,100 acres adjacent to the Missouri River, 35 miles west of downtown St. Louis. The plant consists of four generating units with a combined summer net capability of 2,379 MW. The first unit started operating in 1970, and the fourth and final unit was fully operational in 1973.

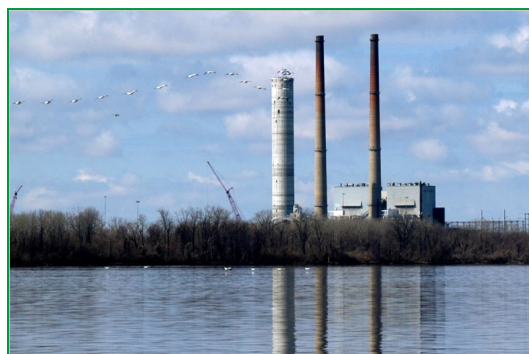


In 2024, projects were executed on the Labadie Unit 3 high pressure (HP), intermediate pressure (IP), and low pressure (LP) turbines, generator, and electrostatic precipitators (ESPs) to support safe, reliable operation for the remaining life of the unit.

Projects related to environmental compliance continue at Labadie. Cooling water intake structure modifications were completed in 2025 to comply with the Clean Water Act.

Sioux Energy Center

Sioux Energy Center is located in St. Charles County, Missouri, 28 miles northwest of downtown St. Louis, on the Mississippi River. It consists of two cyclone boiler units which started operations in 1967 and 1968, respectively, and has a total net summer capability of 976 MW.



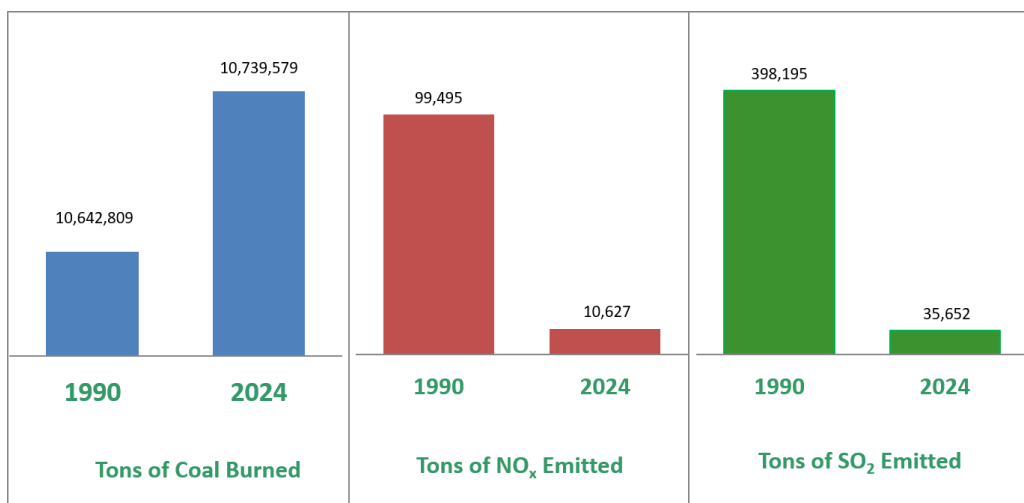
Both units at Sioux are equipped with wet flue gas desulfurization (FGD) equipment, commonly referred to as scrubbers, to comply with the Cross State Air Pollution Rule (CSAPR). The FGD systems at Sioux also provide significant co-benefits in complying with EPA's Mercury and Air Toxics Standards (MATS) rule for both mercury and particulate emissions. As environmental regulations and load projections develop, Ameren Missouri continues to evaluate projects and investments at Sioux to support safe, reliable generation through the planned retirement date.

Historical Emissions from Coal Resources

Ameren Missouri has achieved dramatic reductions in SO₂ and NO_x emissions during the past two decades, despite an increase in the amount of coal consumed to meet our customers' growing energy needs over that period. Over the years, Ameren Missouri has been able to reduce pollutant emissions by using lower-sulfur fuels, by installing cleaner-emitting burners with computer-controlled operation, by improving operation of existing precipitators -- collecting more than 99% of particulates -- and by installing scrubbers at Sioux Energy Center. In addition, Ameren Missouri developed an early, progressive

approach to meeting NO_x control regulations. Figure 4.1 shows the decrease in Ameren Missouri's SO₂ and NO_x emissions as coal consumption has increased.

Figure 4.1 NO_x and SO₂ Emissions Reductions



4.1.2 Existing Gas & Oil Resources

Ameren Missouri owns and operates oil- or natural gas-fired combustion turbine generators (CTG) to provide electricity during times of high demand or when its higher utilization plants are not operating due to a forced outage or scheduled maintenance. Table 4.2 lists the Ameren Missouri combustion turbines and their 2026 summer net generating capabilities.

Table 4.2 CTG Capability

Plant	Fuel	Net MW
Audrain	Gas	605
Goose Creek	Gas	436
Pinckneyville	Gas	316
Raccoon Creek	Gas	303
Kinmundy	Gas	209
Peno Creek	Gas	171
Venice	Gas	485
Fairgrounds	Oil	55
Mexico	Oil	54
Moberly	Oil	54
Moreau	Oil	54
Total		2,742

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4.1.3 Existing Nuclear Resource

Callaway Energy Center is located about 100 miles west of St. Louis, Missouri, in Callaway County. The plant started operations in December 1984 and is the only power plant that uses nuclear fuel in Ameren Missouri's generation fleet. Ameren Missouri has continued to make cost-effective investments in Callaway to replace equipment that is at the end of its service life, including components such as turbine rotors, steam generators and main transformers.



Callaway Energy Center is the second largest power generation facility on the Ameren Missouri system with a net summer capability of 1,194 MW.

4.1.4 Existing Renewable and Storage Resources

Currently, Ameren Missouri owns 384 MW of hydroelectric resources, 440 MW of pumped storage, 699 MW of wind generation, ~925 MW (AC) of solar generation, and 9 MW of landfill gas-to-electric generation.

Existing Hydroelectric Resources

Keokuk

Ameren Missouri's Keokuk hydroelectric plant is located on the Mississippi River at Keokuk, Iowa, 180 miles north of St. Louis. The Keokuk Energy Center has a total net summer capability of 147 MW.

More than a million cubic yards of earth and rock were excavated to build the Keokuk dam and plant, which began operation in 1913. An



engineering marvel of its time, Keokuk is the largest privately owned and operated dam and hydroelectric generating plant on the Mississippi River. Over the years, Ameren Missouri has continued to invest in the modernization and repair of the plant and dam.

As it passes through the power plant, falling water spins turbines, or water wheels, which drive generators that produce electricity. Keokuk Plant is a "run-of-river plant," meaning that all water flowing downstream passes the plant on a daily basis. An average day of operation at Keokuk Plant saves the equivalent of nearly 1,000 tons of coal. The individual units at the Keokuk Energy Center, each having a nameplate rating of less than 10 MW, were certified as qualified renewable energy resources by the Missouri Department of Natural Resources (MDNR) in September 2011.

As of 2025, controllers for all 15 units have been replaced. The balance of plant control system project is expected to be completed in the third quarter of 2026.

Osage

Ameren Missouri's Osage hydroelectric plant is located in Lakeside Missouri on the Osage River at the Lake of the Ozarks. The Osage Energy Center has a total net summer capability of 237 MW.



Osage began operation in 1931. For early settlers, the rolling Osage River in the heart of Missouri's Ozark wilderness provided a way of life and a source of livelihood, whether that was fishing, farming, logging or other pursuits. Then in the 1930s, the river was harnessed when Union Electric Company (now known as Ameren Missouri) built Bagnell Dam to provide power for a growing state and a budding economy. The 1930s-era building of Bagnell Dam and Ameren Missouri's Osage hydroelectric plant created a range of recreational opportunities in the now-popular Lake of the Ozarks.

Every hour the Osage Plant operates, other energy resources are preserved. As water passes through the dam, the pressure of the falling water spins water wheels, which drive generators that produce electricity. In a typical year, Osage Plant uses the clean energy of falling water to produce as much power as 225,000 tons of coal or one million barrels of oil. Osage Energy Center produces completely renewable energy, although it does not qualify as a renewable energy resource per Missouri regulations due to the units being greater than 10 MW.

In 2021, Osage completed the last Unit Controller Replacement project, finishing a multi-year effort to update the controls on all eight generating units of the hydroelectric facility. In February 2026 a project was completed on the balance of plant control system, pulling all of the unit controllers together.

Existing Pumped Storage

Taum Sauk

The Taum Sauk pumped storage plant is located approximately 120 miles southwest of St. Louis in the scenic Ozark highlands. The Taum Sauk Energy Center has a total net summer capability of 440 MW.



Taum Sauk Plant began operation in 1963, the turbines were completely rebuilt in 1999, and the upper reservoir rebuild project was completed in 2010. Taum Sauk is used primarily on a peaking basis and is put into operation when the demand for electricity is greatest. The pump storage system works

much like a conventional hydroelectric plant but is usually used only to meet daily peak power demands. The pump storage system works much like a conventional hydroelectric plant but is usually used only to meet daily peak power demands. Water stored in an upper reservoir is released to flow through turbines and into a lower reservoir during periods of high energy demand. Then, overnight, when the demand for electricity is low, the water is pumped back into the upper reservoir, where it is stored until needed.

Ameren Missouri has initiated projects to replace the Generator Step Up (GSU) Transformers at Taum Sauk. Unit 1 went in service December 1, 2025. Unit 2 was completed May 21, 2026. The GSUs link the Taum Sauk generators to the grid, increasing the voltage from the generator to a level suitable for transmission. The new, larger GSUs are sized to handle the full output of the Taum Sauk generators and will reduce environmental risk by replacing the current oil-cooled technology with gas-insulated GSUs.

Existing Wind Resources

Ameren Missouri owns and operates nearly 700 MW of wind generation across its diverse generation portfolio. Wind facilities generate electricity by using turbines that convert the kinetic energy of moving air into electrical energy. Wind resources can provide significant energy production across a wide range of hours and seasons, supporting system reliability and helping meet customer demand with emission-free energy.

Atchison Renewable Energy Center

In May 2019, Ameren Missouri entered into an agreement to acquire, after construction, a 299 MW wind farm in Atchison County in northwest Missouri. The wind farm consists of 91 wind turbines that range in total height from 442 to 590 feet above ground. It received its renewable energy resource certification from the MDNR in February 2021. In March 2021, Atchison Renewable Energy Center became operational at a reduced capacity of 120 MW; by July 2021, it reached its full operational capacity of 298.6 MW.

High Prairie Renewable Energy Center

In May 2018, Ameren Missouri entered into an agreement to acquire, after construction, a 400 MW wind farm in Adair and Schuyler counties in northeast Missouri. The wind farm consists of 175 wind turbines that stand nearly 500 feet above the ground. Ameren Missouri began commercially



operating the High Prairie Renewable Energy Center in December 2020 and it became certified as a renewable energy resource by the MDNR in February 2021.

Existing Solar Resources

Ameren Missouri owns and operates more than 900 MW of solar generation across its fleet. Solar facilities generate electricity by using photovoltaic panels to capture solar radiation and convert it to energy which is exported to the electric grid. Solar generation produces emission-free energy and has zero fuel costs making it a low-cost resource to operate.

Boomtown Renewable Energy Center

Boomtown Renewable Energy Center is a 150 MW solar facility located in White County, Illinois. It became operational in November 2024. By producing energy during daytime hours when customer demand is often high, it helps meet peak energy needs with no fuel cost and no exposure to change in fuel prices.



Huck Finn Renewable Energy Center

Huck Finn Renewable Energy Center is a 200 MW solar facility located in Audrain and Ralls Counties, Missouri. It became operational in December 2024. Huck Finn is anticipated to produce enough energy each year to power more than 37,000 homes. It was certified as a renewable energy source in February 2025.



Cass County Renewable Energy Center

Cass County Renewable Energy Center is a 150 MW solar facility located in Cass County, Illinois that went into service in December 2024. Cass County solar is anticipated to produce 330,000 MWh annually helping meet the energy needs of Ameren Missouri customers.



Split Rail Solar

Split Rail Renewable Energy Center is a 300 MW solar farm in Warren County, Missouri. The Split Rail Solar facility is currently the largest solar facility in Ameren Missouri's fleet. It is expected to generate approximately 620,000 MWh or more annually. The facility was placed in service at the end of June 2026.

***Bowling Green Solar***

Bowling Green Renewable Energy Center is a 50-MW project based in Pike County, Missouri that went into service in April 2026 and can generate more than 110,000 MWh annually.

***Vandalia Renewable Energy Center***

Vandalia Renewable Energy Center is a 50 MW solar farm in Audrain County, Missouri that went into service in December 2025. It will provide energy needs for about 10,000 homes a year.

***O'Fallon Renewable Energy Center***

In December 2014, Ameren Missouri began operation of 4.5 MW (AC) of solar generation at the O'Fallon Renewable Energy Center. The O'Fallon facility includes more than 19,000 polysilicon solar panels and is located on 25 acres of land owned by Ameren Missouri.

Ameren Missouri-BJC Solar Partnership

In October 2019, the Ameren Missouri BJC Solar Partnership project was completed. This facility generates 1.57 MW (AC) of solar power directly onto the 12.47-kV grid while being hosted by the BJC Parking Garage. This project was completed through the Solar Partnership Pilot Program.

Community Solar Resources

Ameren Missouri owns and operates two solar facilities that exclusively support the company's Community Solar Pilot Program for residential and small business customers. Both facilities are fully subscribed. Due to the success of the pilot program, Ameren

Missouri received approval to implement a permanent Community Solar Program within the electric rate review filed in March 2021.

Lambert Community Solar Energy Center

In August 2019, the Ameren Missouri Lambert Community Solar Energy Center began operation of 942 kW (AC) of solar generation. The facility is located on land owned by St. Louis Lambert International Airport just west of the airfield near Lindbergh and Missouri Bottom Road. The facility supports approximately 350 customer enrollments in the Community Solar Pilot Program.

Montgomery Community Solar Center

In March 2022, the Ameren Missouri Montgomery Community Solar Energy Center began operation of 5.74 MW (AC) of solar generation. This facility is currently Ameren Missouri's largest operational solar energy center in the Community Solar program and supports more than 2,000 enrolled customers. The tilt-panel design, a first for Ameren Missouri, allows the panels to follow the sun's trajectory through the day, maximizing the amount of energy captured from the sun.

New Florence Solar

New Florence Energy Center is a 7 MW project based in Montgomery County, Missouri. The facility is part of Ameren's Community Solar program. The facility was placed in service at the end of June 2026.

Neighborhood Solar Resources

Ameren Missouri's Neighborhood Solar Program aims to add solar generation at customer partner sites that will inclusively benefit customers through renewables education, visibility, and workforce opportunities. Ameren Missouri will own and operate all Neighborhood Solar systems for the benefit of all customers; host participants provide site access to the partnership. Ameren Missouri has completed six Neighborhood Solar sites with a combined capacity of 2.6 MW (AC), fully utilizing the \$14 million budget allocated through Senate Bill 564. Each site's development incorporated solar education tours and equitable workforce development union pre-apprentice job opportunities for diverse candidates. They are as follows:

South St. Louis Renewable Energy Center

The South St. Louis Renewable Energy Center is a 192 kW (AC) parking lot solar canopy in the diverse Dutchtown neighborhood of South St. Louis City. Habitat for Humanity Saint Louis is offering the use of the space so the energy produced there can benefit all Ameren Missouri customers. The site began generating energy in August 2021.

Cape Girardeau Renewable Energy Center

The largest Neighborhood Solar installation at 1.2 MW (AC), the Cape Girardeau Renewable Energy Center went into service in July 2022. This facility is located on the campus of Southeast Missouri State University, providing covered parking for the Show Me Center.

Fee Fee Renewable Energy Center

The Fee Fee Renewable Energy Center is a 504 kW (AC) parking lot solar canopy located between Aquaport and Maryland Heights Community Center. The City of Maryland Heights is offering the use of the space so the energy produced there can benefit all Ameren Missouri customers. The site began generating energy in April 2023.

North Metro Renewable Energy Center

The North Metro Renewable Energy Center is a 192 kW (AC) parking lot solar canopy located at the Ameren Missouri North Metro Operating Center. The site began generating energy in April 2023.

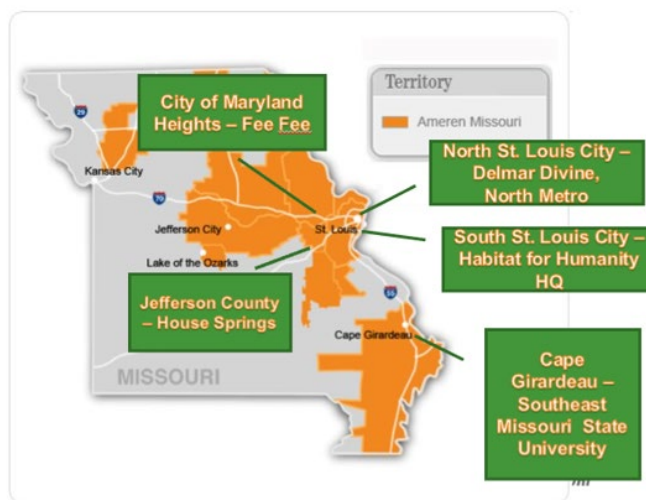
Delmar Renewable Energy Center

The Delmar Renewable Energy Center is a 288 kW (AC) parking lot solar canopy located at Delmar DivIne in the West End neighborhood. The site began generating energy in August 2023.

House Springs Renewable Energy Center

The House Springs Renewable Energy Center is a 228 kW (AC) parking lot solar canopy located at the Ameren Missouri House Springs Operating Center. The site began generating energy in August 2023.

Figure 4.2 Neighborhood Solar Site Map



Existing Landfill Gas Resource

Maryland Heights Renewable Energy Center

The Maryland Heights Renewable Energy Center (MHREC) is located in St. Louis County approximately 18 miles northwest of St. Louis. The MHREC is the largest landfill-gas-to-electric facility in Missouri and one of the largest in the country. The facility began operation in June 2012. It has a total net summer capacity of 9 MW. MHREC burns methane gas produced by the IESI Landfill in Maryland Heights, Missouri, using three Solar Mercury 50 gas turbines to produce electricity. The current contract with the landfill guarantees enough gas supply for three generators until 2032. In August 2012, the MHREC was certified as a qualified renewable energy resource by the MDNR.



4.1.5 Levelized Cost of Energy Evaluation for Existing Resources²

The levelized cost of energy (LCOE) was calculated for Ameren Missouri's existing resources. LCOE represents going-forward costs of ownership and operation and provides a basis for comparison to new resource alternatives. It is important to note that the LCOE figures do not fully capture all of the relative strengths of each resource type. Table 4.3 shows the component analysis for the LCOE for each energy center. The average LCOE for Ameren Missouri's entire generating fleet is approximately \$38.28/MWh.

² 20 CSR 4240-22.040(2)(A); 20 CSR 4240-22.040(2)(B); 20 CSR 4240-22.040(2)(C)1

Table 4.3 Levelized Cost of Energy Component Analysis for Existing Resources

Existing Resources	Levelized Cost of Energy (¢/kWh)										
	Capital	O&M	Fuel	PTC	Decommission	Pump Cost	Env Capital	CO2	SO2	NOx	Total Cost
Labadie	0.31	0.53	1.98	--	--	--	0.02	0.84	0.00	0.01	3.69
Sioux	0.37	1.09	2.69	--	--	--	0.03	0.20	0.00	0.03	4.40
Callaway	2.27	0.00	0.92	--	--	--	--	0.00	0.00	0.00	3.20
Audrain CTG	17.26	0.64	6.25	--	--	--	--	1.02	0.00	0.00	25.18
Goose Creek CTG	26.09	18.05	5.06	--	--	--	--	0.58	0.00	0.00	49.79
Pinckneyville CTG	5.82	2.28	4.36	--	--	--	--	0.50	0.00	0.01	12.97
Raccoon Creek CTG	0.70	0.46	5.12	--	--	--	--	0.59	0.00	0.01	6.87
Kinmundy CTG	42.02	9.86	4.58	--	--	--	--	0.52	0.00	0.02	57.00
Peno Creek CTG	11.52	1.62	5.47	--	--	--	--	0.89	0.00	0.01	19.52
Venice CTG	0.63	3.80	3.00	--	--	--	--	0.06	0.00	0.02	7.51
Fairgrounds CTG	0.27	0.11	20.45	--	--	--	--	0.07	0.00	0.24	21.14
Mexico CTG	0.27	0.08	18.74	--	--	--	--	0.07	0.00	0.22	19.39
Moberly CTG	0.27	0.08	18.74	--	--	--	--	0.07	0.00	0.22	19.39
Moreau CTG	0.27	0.08	18.74	--	--	--	--	0.07	0.00	0.22	19.39
Keokuk	6.02	0.82	--	--	--	--	--	0.00	0.00	0.00	6.84
Osage	3.39	1.57	--	--	--	--	--	0.00	0.00	0.00	4.96
Taum Sauk	6.31	1.83	--	--	--	9.46	--	0.00	0.00	0.00	17.60
MHREC CTG	1.67	3.42	4.27	--	--	--	--	0.00	0.00	0.00	9.36
High Prairie	0.25	1.35	--	-1.24	--	--	--	0.00	0.00	0.00	0.36
Atchison	0.05	1.02	--	-1.24	--	--	--	0.00	0.00	0.00	-0.17
Ofallon Solar	0.13	0.44	--	--	--	--	--	0.00	0.00	0.00	0.57
Lambert	0.12	1.03	--	--	--	--	--	0.00	0.00	0.00	1.15
BJC	6.78	0.64	--	--	--	--	--	0.00	0.00	0.00	7.42
Montgomery	13.29	0.49	--	--	--	--	--	0.00	0.00	0.00	13.77
Neighborhood Solar	0.85	0.08	--	--	--	--	--	0.00	0.00	0.00	0.93
Boontown Solar	0.16	0.65	--	--	--	--	--	0.00	0.00	0.00	0.82
Huck Finn Solar	0.19	0.83	--	-2.14	--	--	--	0.00	0.00	0.00	-1.13
Vandalia Solar	0.06	0.42	--	--	--	--	--	0.00	0.00	0.00	0.49
Cass County Solar	0.24	1.08	--	--	--	--	--	0.00	0.00	0.00	1.32

4.1.6 Planned Changes to Existing Non-Coal Resources

Ameren Missouri is currently adding oil backup capability at its Audrain Energy Center, with the new systems to support oil-fired operations in-service by December 2026. The project is expected to improve winter seasonal accredited capacity since oil firing can replace gas when gas is not available during the coldest days of the year.

During the 20-year planning horizon, Ameren Missouri is considering the retirement of several CTG units.

CTG Retirements

Ameren Missouri previously conducted a high-level retirement evaluation of the existing CTG fleet. The potential retirement recommendation is based on operating experience, condition of the assets, and qualitative analysis. The qualitative analysis considered factors such as condition of subsystems, obsolescence of control systems, availability of spare parts, and building condition. Based on the evaluation and in light of current market assumptions, Ameren Missouri plans to retire four of its older gas- and oil-fired CTG units (i.e., Fairgrounds, Mexico, Moberly, and Moreau), with a total net capacity of 217 MW, over the next 20 years. A combination of factors led to the potential CTG retirement recommendations, including the fact that the average age of those units is 43 years, and for some of the units, the long-term availability of spare parts is questionable. The lead time for obtaining spare parts is unknown. Table 4.4 provides a summary of the planned

CTG retirements. The planned CTG retirements are included in the base capacity position.

The results of a detailed condition assessment for each unit will be used as the basis for economic analysis to be considered along with other factors such as overall age, condition, reliability, safety and cost, significant capital needs, near-term capacity value, and availability of spare parts. Such economic analyses are generally initiated when a need for significant capital investment is identified and/or when expected market conditions change substantially.

In September 2021, the Illinois General Assembly passed the Climate and Equitable Jobs Act (CEJA), and Governor Pritzker signed it into law in the same month. Among other things, CEJA provides for the elimination of fossil-fueled generation in Illinois by 2045. The law requires fossil-fueled generators owned by investor-owned utilities to be retired by January 1, 2040; however, the timeline for retirement is accelerated for generators in close proximity to statutorily designated Environmental Justice Communities. Of Ameren Missouri's CTG facilities in Illinois, Venice Energy Center (485 MW) is the only facility that is subject to this accelerated requirement. As a result, the Company expects Venice to be retired by January 1, 2030, and the remaining CTGs in Illinois with summer net capability of 1,749 MW to be retired by January 1, 2040.

Table 4.4 Ameren Missouri Assumed CTG Retirements during the Planning Period

Unit	Capacity (MW)	Fuel Type	Retirement Time Frame
Fairgrounds	55	Oil	12/31/2032
Mexico	54	Oil	12/31/2032
Moberly	54	Oil	12/31/2032
Moreau	54	Oil	12/31/2032
Venice	485	Natural Gas	12/31/2029
Goose Creek	436	Natural Gas	12/31/2039
Pinckneyville	316	Natural Gas	12/31/2039
Raccoon Creek	303	Natural Gas	12/31/2039
Kinmundy	209	Natural Gas/Oil	12/31/2039

4.2 Existing Steam Generation Evaluation

Ameren Missouri has evaluated its coal energy centers in terms of condition, base retirement assumptions, reliability trends, operation and maintenance costs, and capital expenditures. Table 4.5 lists the commercial operation date for each generating unit, the average age at each energy center as of 12/31/2026, and the base retirement

assumptions consistent with the Company's 2025 Change in Preferred Plan filing. Additional retirement dates will be analyzed and reported in Chapter 9.

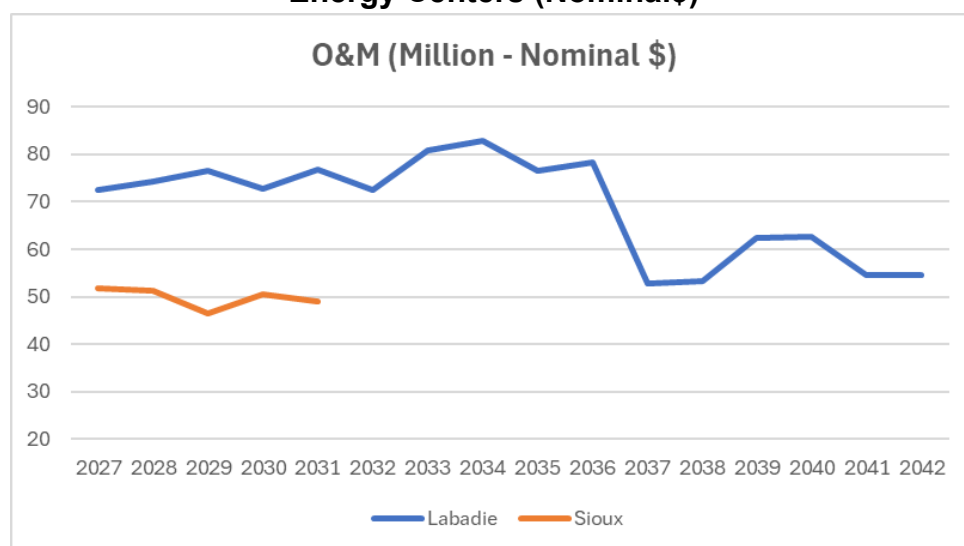
Table 4.5 Ameren Missouri Coal Energy Center Commercial Operation Dates, Average Age, and Base Retirement Assumptions³

Energy Center	Commercial Operation Date				Average Age as of 12/31/2026	Base Retirement Assumptions (Retirement Date)
	Unit 1	Unit 2	Unit 3	Unit 4		
Labadie	1970	1971	1972	1973	55	2036(2U), 2042(2U)
Sioux	1967	1968			59	2031

4.2.1 Operations and Maintenance Costs

The plant O&M costs are anticipated to remain flat to declining in real terms in the future. Figure 4.3 shows the future O&M costs from 2027 to 2042 using the base retirement dates for each energy center. The labor portion of the O&M assumes a 50% pension and benefit loading factor. The O&M forecasts in the figure do not include annual revenues from ash sales. A six-year outage cycle for Labadie and a 3-year outage cycle for Sioux are assumed in the O&M forecast.

Figure 4.3 Future Non-Environmental Annual O&M for Ameren Missouri Coal Energy Centers (Nominal\$)



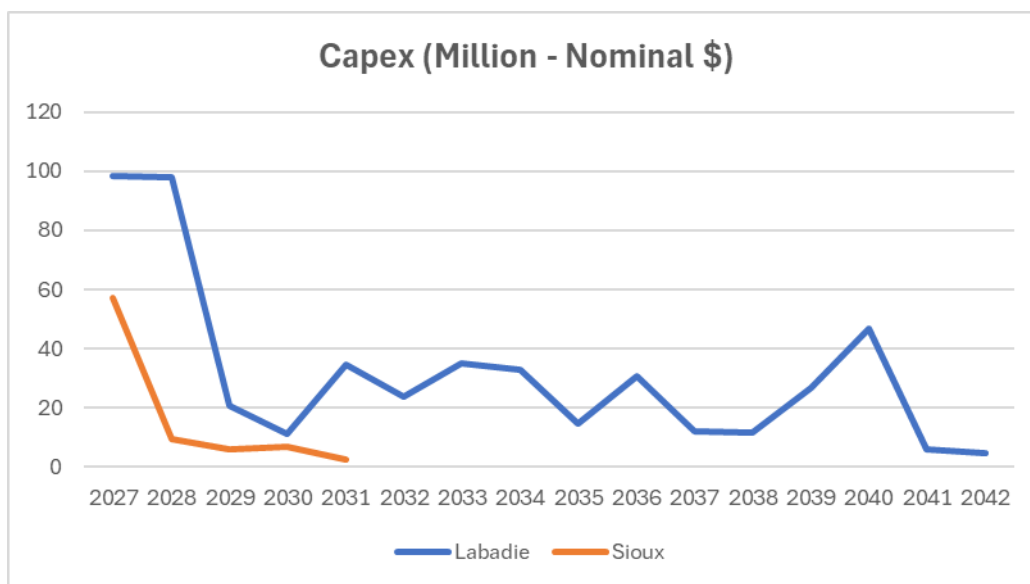
4.2.2 Capital Expenditures

Figure 4.4 shows the future non-environmental capital expenditures for 2027 to 2042 using the base retirement date for each energy center. Future environmental capital expenditures are discussed in Chapter 5. The future non-environmental plant capital expenditures were provided by Ameren Missouri Power Operations Services. Note that

³ The Labadie generating units are currently assumed to be retired in 2036 (two units) and 2042 (two units).

assumptions for capital expenditures may vary significantly for alternate retirement dates and that such differences are included in the assumptions used for the analysis of alternative resource plans that will be discussed in Chapter 9.

Figure 4.4 Future Non-Environmental Capital Expenditures Ameren Missouri Coal Energy Centers (Nominal\$)



4.3 Efficiency Improvement⁴

4.3.1 Existing Facility Efficiency Options

Ameren Missouri has implemented various initiatives to improve efficiency and reduce GHG emissions at its existing facilities. These initiatives include replacement of incandescent light bulbs with compact fluorescent light bulbs and LEDs, and standardization of low-energy usage light fixtures during system replacements. Another initiative to improve efficiency and reduce GHG emissions in the operation of heating, ventilation, and air conditioning (HVAC) equipment through the installation of programmable thermostats for control of HVAC systems is expected to reduce energy consumption during off-hours. The projects completed in 2011 through 2024 have reduced energy consumption by more than 5,075 MWh annually and reduced CO₂ emissions by more than 2,855 metric tons annually (assuming ~0.6 metric tons of CO₂ per MWh). Ameren Missouri will continue assessing and implementing the projects that prove to be feasible on an ongoing basis. Ameren Missouri recently completed a multi-year program that began in 2016 and replaced 140,000 company-owned street and outdoor lights with LED fixtures. Now, most company-owned lights feature LED

⁴ 20 CSR 4240-22.040(1)

technology, saving lighting customers nearly \$2.3 million per year compared to non-LED rates.

4.3.2 Existing Energy Center Efficiency Options⁵

Ameren Missouri continues to be focused on maintaining the efficiency of its coal-fired generating units. Projects that improve efficiency that are a benefit to the company and to customers continue to be evaluated and executed when appropriate. Projects and work activities that restore efficiency lost due to equipment degradation or operating issues continue to be evaluated and executed on a regular basis.

Ameren Missouri performs long-term scheduled major maintenance outages. Much of the work performed during these major outages (such as replacement or repair of leaking valves, restoration of duct work, insulation of equipment, and cleaning of equipment) typically results in improved efficiency when the unit returns to service.

Ameren Missouri's generating resources utilize the Plant Reliability Optimization (PRO) process to maintain assets in a cost efficient and effective manner to support conservative operations. The PRO process integrates personnel from all levels of the organization and uses data to assess equipment condition to prioritize and plan resources and work. The process develops, implements, and standardizes best practices system-wide to reduce failure rates on critical equipment, balancing additional maintenance costs against potential production losses to optimize investments, while ensuring equipment performance and condition support of safe and reliable asset operation.

Ameren Missouri continues to utilize performance monitoring on its major Energy Centers and has recently expanded focus to incorporate monitoring of wind and solar assets. Performance monitoring includes analysis of rotating equipment, vibration monitoring, Real Time Alarm Monitoring and expansion of monitoring services to the CTG fleet, along with exploring additional technologies and software to accomplish these goals. The Performance Monitoring function works closely with the Real Time Operations Group and complements Ameren Missouri's existing generation operations and dispatch functions.

Operational monitoring at Ameren Missouri's coal plants is also an important tool in maintaining the heat rate (efficiency) at the coal plants. EtaPRO is a continuous monitoring software tool used at all the plants to monitor thermal performance of critical equipment. The EtaPRO system is maintained by Performance Engineering and is also used by performance engineers to generate plant heat rate (efficiency) reports. Operations personnel routinely check system components during operation and start-up modes to ensure that valve line-ups are correct, and equipment performance is maintained.

⁵ 20 CSR 4240-22.040(1)

4.4 Compliance References

20 CSR 4240-22.040(1)	1, 16, 17
20 CSR 4240-22.040(2)	1
20 CSR 4240-22.040(2)(A)	12
20 CSR 4240-22.040(2)(B)	12
20 CSR 4240-22.040(2)(C)1	12