

Missouri is planning its biggest generation build in a generation. Your capital plan is where it happens.

Data centers are stacking gigawatts of new load onto a grid split between MISO and SPP, coal is retiring, and Senate Bill 4 now lets utilities recover construction costs in real time — so new gas, nuclear, and transmission all compete for the same dollars. Each of those forces reshuffles the projects on your list. Invizion helps electric utilities re-sequence a capital portfolio in a click — and defend every decision.

91¹	5,950 MW²	2,100 MW³	\$11B⁴
Active data centers in Missouri, with at least 14 more in development.	SPP's projected capacity shortfall by 2029 — part of the reliability squeeze on Missouri's grid.	Ameren Missouri's planned West Alton gas plant, targeted for 2031.	Grain Belt Express transmission investment crossing Missouri.

THE MISSOURI LANDSCAPE

Four forces are moving your project list at once

None of these is theoretical, and none of them waits for your next budget cycle. Together they mean the capital plan you approved last year may already be the wrong plan.

DEMAND — LOAD GROWTH**Gigawatts of new load, arriving fast**

Missouri already hosts 91 active data centers with at least 14 more in development,¹ and utilities told FERC that demand is rising “at a rate unseen since World War II,” particularly across MISO and SPP.⁶

Nationally, electricity use is projected to climb 16–25% by 2034 — and every hyperscale campus that lands near St. Charles, Kansas City, or mid-Missouri is a multi-hundred-megawatt commitment competing for the same capitals⁵

RELIABILITY — TWO RTOS**Thin margins across MISO and SPP**

SPP ordered rolling blackouts across western Missouri during the February 2021 cold snap,⁷ and it now projects a 5,950 MW capacity shortfall by 2029, while MISO sees a need for roughly 17 GW of new generation over 20 years²

Missouri straddles both RTOs — MISO in the north and mid-state, SPP in the west and south — so resource adequacy depends on projects landing on schedule in two markets at once⁸

GENERATION — THE TRANSITION**Coal out; gas, nuclear, and renewables in**

Ameren Missouri closed the 1,178 MW Rush Island coal plant in October 2024⁸ and is replacing capacity with an 800 MW simple-cycle gas plant by 2027, a combined-cycle unit in 2033, and 2,800 MW of wind and solar by 2030 on the way to net-zero by 2045.⁹

The 1,215 MW Callaway plant — the state's only reactor, supplying about 15% of Missouri's electricity — anchors the plan, and Ameren now aims to add 1,500 MW of new nuclear at the site by 2045.¹⁰

CAPITAL — GRID & TRANSMISSION**Build generation and transmission at once**

The \$11 billion, 5,000 MW Grain Belt Express is being built across Missouri,⁴ and Ameren is layering on MISO transmission work — roughly \$940 million and \$718 million on two projects due in service in 2034 — plus \$2.65 billion of capital in the first half of 2026 alone.³

Coal replacement, new gas, nuclear, and transmission are all competing for the same dollars and the same crews. Something on the list has to move.

WHO RUNS MISSOURI'S GRID

Two large investor-owned utilities, a major generation co-op, and municipals

Missouri's grid is carried by PSC-regulated investor-owned utilities, one of the nation's largest generation-and-transmission cooperatives, and municipal systems. The pressures are shared; the accountability path differs.

Investor-owned utilities

Rates & capital recovery regulated by the Missouri PSC

Ameren Missouri	~1.2M electric customers · St. Louis & eastern Missouri ¹²
Evergy Missouri Metro	Kansas City metro · part of Evergy's 1.7M-customer KS/MO footprint ¹³
Evergy Missouri West	St. Joseph & western Missouri
Liberty (Empire District Electric)	Southwest Missouri

Ameren plans \$2.65 billion of capital in the first half of 2026 alone and is filing new Missouri rates for mid-2027³

Cooperatives & public power

Governed by boards & members, not PSC rates

Associated Electric Cooperative (AECI)	Wholesale power to 51 distribution co-ops · ~2.1M member-consumers ¹⁴
KAMO Power, N.W. Electric, Sho-Me Power	AECI transmission member-owners
City Utilities of Springfield · Columbia Water & Light	Municipal electric systems

AECI serves about 2.1 million member-consumers across Missouri, Oklahoma, and Iowa — capital decisions made by member boards, not the PSC.¹⁴

Every capital dollar has to be defensible

Whether you answer to the Public Service Commission or a member board, the question is the same: why this project, why now, why at this cost?

Missouri Public Service Commission (PSC) regulates rates, resource plans, and capital recovery for investor-owned utilities including Ameren Missouri, Evergy Missouri, and Liberty/Empire¹⁶

Senate Bill 4 (2025), signed by Gov. Kehoe in April 2025, unlocked construction-work-in-progress (CWIP) recovery for new natural gas generation and moved gas and water rates to a forward test year — reversing a CWIP ban Missouri voters approved in 1976¹⁷

Integrated Resource Planning now requires 16-year demand-and-supply projections, and CWIP eligibility is tied to generation approved in those plans²

Ameren Missouri rate filing targeting mid-2027 seeks recovery for grid upgrades and new generation, with a proposed roughly \$13/month average residential increase³

The money is moving — can your plan absorb it?

Missouri utilities have more generation and transmission capital in motion than they've had in decades. The constraint is readiness: which projects qualify, which are shovel-ready, and how the timing lines up.

Grain Belt Express: \$11B private transmission — a 5,000 MW line crossing Missouri, largely funded by developer Invenergy, with an Ameren connector line in Callaway and Montgomery counties targeted for about 2029⁴¹⁵

Ameren MISO transmission: ~\$940M + ~\$718M on two regional projects due in service in 2034³

DOE nuclear loan program: \$17.5B announced June 2026 for up to 10 large reactors — Missouri's Advanced Nuclear Energy Task Force is pushing for one at Callaway¹⁰

SB 4 CWIP cost recovery lets utilities earn on generation while it is under construction — an Energy Innovation analysis projects average household bills up roughly \$640/year by 2035 as that capital flows²¹⁷

MISSOURI'S GRID, IN BRIEF

Questions Missouri utility leaders are asking

Short, sourced answers — the same facts we dig into with utilities looking at their capital programs.

How fast is Missouri's electricity demand growing?

Missouri hosts 91 active data centers with at least 14 more in development, utilities describe demand rising at a rate “unseen since World War II” across MISO and SPP, and national electricity use is projected to climb 16–25% by 2034¹⁶⁵

What is Senate Bill 4 and why does it matter?

SB 4, signed by Gov. Kehoe in April 2025, lets utilities recover construction-work-in-progress (CWIP) costs for new natural gas generation and bases gas and water rates on a forward test year — reversing the CWIP ban Missouri voters passed in 1976 after the Callaway nuclear dispute⁹⁷²

What's happening to Missouri's coal and nuclear plants?

Ameren Missouri retired the 1,178 MW Rush Island coal plant in October 2024, while the 1,215 MW Callaway plant — the state's only reactor, supplying about 15% of its electricity and licensed through 2044 — is set to be joined by 1,500 MW of new nuclear Ameren plans by 2045⁸¹¹¹⁰

Who regulates Missouri's electric utilities?

The Missouri Public Service Commission sets rates and reviews resource plans for investor-owned utilities such as Ameren Missouri, Evergy Missouri, and Liberty/Empire. Cooperatives like Associated Electric and municipal systems are governed by member and city boards instead⁶¹⁴

Can the grid keep up as demand climbs?

SPP ordered rolling blackouts in western Missouri in February 2021 and now projects a 5,950 MW shortfall by 2029, while MISO sees a need for about 17 GW of new generation over 20 years — and Missouri sits in both RTOs at once⁷²⁶

How does Invizion help Missouri electric utilities plan capital?

Invizion is scenario-based capital portfolio optimization for utilities. It lets you model how a data-center load surge, a CWIP-eligible gas or nuclear project, or a shifting transmission timeline reshuffles your whole project list, re-sequence the portfolio automatically, and keep a defensible record of every decision for the PSC or your board.

REFERENCES

Sources

Every figure in this briefing is tied to a primary or authoritative source.

1. Missouri Independent — “They’re already here”: 91 active data centers, 14 in development in Missouri, June 5, 2026. missouriindependent.com
2. Missouri Independent — Massive utility legislation (SB 4): CWIP for gas, forward test year, SPP 5,950 MW shortfall by 2029, MISO ~17 GW over 20 years, 1976 CWIP ban, March 7, 2025. missouriindependent.com
3. StockTitan — Ameren (AEE) news: West Alton 2,100 MW gas by 2031; MISO transmission ~\$940M and ~\$718M due 2034; \$2.65B HI 2026 capex; mid-2027 Missouri rate filing (~\$13/mo), 2026. stocktitan.net
4. Grain Belt Express (Invenergy) — 5,000 MW line, Kansas–Missouri–Illinois, \$11 billion private transmission investment. grainbeltexpress.com
5. Missouri Independent — Missouri power grid faces costly upgrades as AI data centers drive demand; U.S. electricity use projected +16–25% by 2034, Aug 27, 2026. missouriindependent.com
6. Missouri Independent — Utilities’ FERC filing: demand rising at a rate “unseen since World War II” in MISO and SPP; Missouri split between the two RTOs, July 22, 2026. missouriindependent.com
7. Missouri Independent — SPP investigators on the February 2021 rolling blackouts across Kansas and western Missouri, July 26, 2021. missouriindependent.com
8. Missouri Independent — Ameren Missouri’s 1,178 MW Rush Island coal plant to close (October 2024), Oct 11, 2024. missouriindependent.com
9. Missouri Independent — Ameren Missouri IRP: 800 MW gas by 2027, combined-cycle in 2033, 2,800 MW wind/solar by 2030, net-zero by 2045, Sept 26, 2023. missouriindependent.com
10. Missouri Independent — Missouri eyes nuclear expansion at Callaway (~15% of state power, license to 2044, Ameren +1,500 MW nuclear by 2045, DOE \$17.5B nuclear loans), July 8, 2026. missouriindependent.com
11. Wikipedia — Callaway Nuclear Generating Station: 1,215 MW nameplate (~1,190 MWe net), Missouri’s only reactor, Ameren Missouri-operated, in service 1984. en.wikipedia.org
12. Wikipedia — Ameren: Ameren Missouri serves ~1.2 million electric and ~110,000 gas customers; Labadie is Missouri’s largest coal plant. en.wikipedia.org
13. Wikipedia — Evergy: ~1.7 million electric customers across Kansas and Missouri; ~16,000 MW of capacity. en.wikipedia.org
14. Associated Electric Cooperative (AECI) — six transmission member-owners, 51 distribution co-ops, ~2.1 million member-consumers across Missouri, Oklahoma, and Iowa. aeci.org
15. Missouri Independent — Planned Ameren Missouri ~30-mile transmission line (Callaway/Montgomery counties) to connect with Grain Belt Express, targeted for 2029, Dec 15, 2025. missouriindependent.com
16. Missouri Public Service Commission — regulator of Ameren Missouri, Evergy Missouri, Liberty/Empire, and Spire. psc.mo.gov
17. Missouri Independent — Missouri braces for spike in energy costs: SB 4 signed by Gov. Kehoe April 2025, forward test year; Energy Innovation projects ~\$640/yr higher bills by 2035, Oct 22, 2025. missouriindependent.com

ABOUT INVIZION

Capital program optimization for utilities

Invizion is a purpose-built capital lifecycle management platform for utilities. It integrates budgeting, CIP, scenario analysis, and funding-source tracking in one system — so utilities can re-sequence a capital portfolio in a click and demonstrate audit-ready, defensible decisions to regulators, boards, and rating agencies.

See how utilities keep capital plans current and defensible with Invizion.

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