
POWER
MO
Securing Missouri's Energy Future

Policymakers Summit
2025 Legislative Session

AGENDA

- Introductory Presentation on Key Issues:
  1. Commission Responsibility – Focus on *Adequate* Service
  2. Resource Adequacy Summit Recap
  3. Missouri Market Environment

- POWER MO 3 Part Solution:
  1. State Reliability Mechanism
  2. Integrated Resource Planning (IRP) Reform
  3. Accounting Reform

Missouri Public Service Commission

- Established in 1913
- The Commission regulates investor-owned utilities
  - Examples: Ameren, Evergy, Liberty, Summit, Missouri American Water, Spire
  - The Commission does not “rate-regulate” cooperatives or city-owned utilities
- Responsibility to ensure that consumers receive **“safe and *adequate* service at just and reasonable rates”**

Adequate Service

- **Adequate = Reliable**
- Electric Utility Resource Planning Rules
  - (1) (2) The fundamental objective of the resource planning process at electric utilities shall be to provide the public with energy services that are safe, reliable, and efficient, at just and reasonable rates…(20 CSR 4240-22.010)
  - (53) Resource planning means the process by which an electric utility evaluates and chooses the appropriate mix and schedule of supply-side, demand-side, and distribution and transmission resource additions and retirements to provide the public with an adequate level, quality, and variety of end-use energy services……
  - (58) Supply-side resource or supply resource means any device or method by which the electric utility can provide to its customers an adequate level and quality of electric power supply……(22 CSR 4240-22)
- We are ***at risk*** for inadequacy/reliability concerns

Costs of Inadequate Service

- Inability to attract and retain large users of power
  - Examples: Ford, Panasonic (Eco devo projects we have lost)
- Actual costs associated with power outage to consumers
  - Large Industrials - $ per hour out of power
  - Utilities – Fuel costs and market costs
  - Residential customers – Food spoilage, healthcare costs
- Our citizens do **NOT** benefit where they otherwise can
  - Economic development, jobs, tax benefits, convenience

Takeaway: Current policies are *NOT* working


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Powering Missouri: An Evolving Landscape

- Grid Demands and Challenges
- Generation Resource Mix
- Anticipated Load Growth
- Individual, Community, and Business Demands
- Market Forces and Challenges
- Federal Regulatory Changes and Uncertainties
- Incentive Structure of Ratemaking and Subsidies
- Seasonal Impacts and Extreme Weather Events
- Reliability and Resiliency

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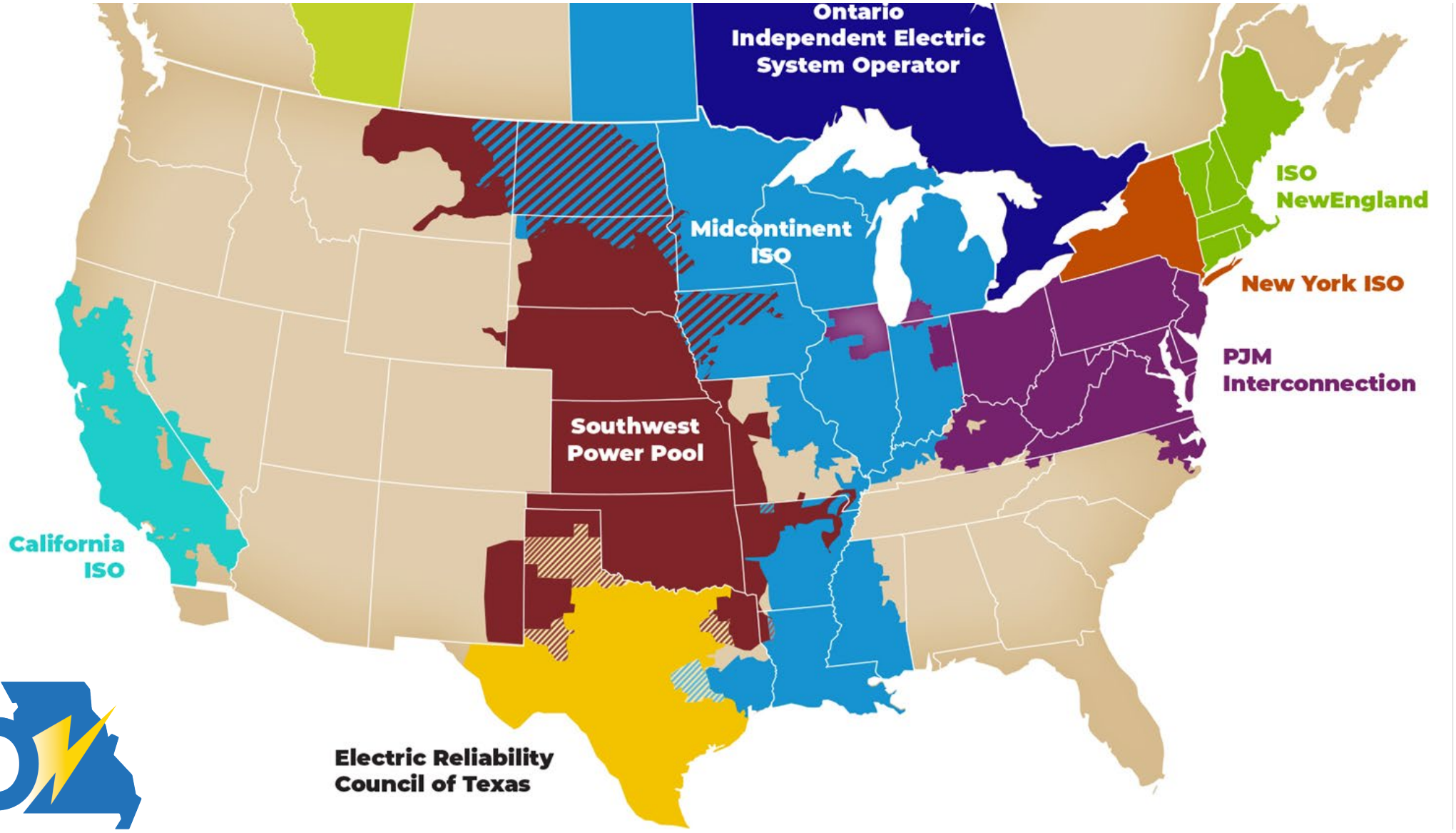
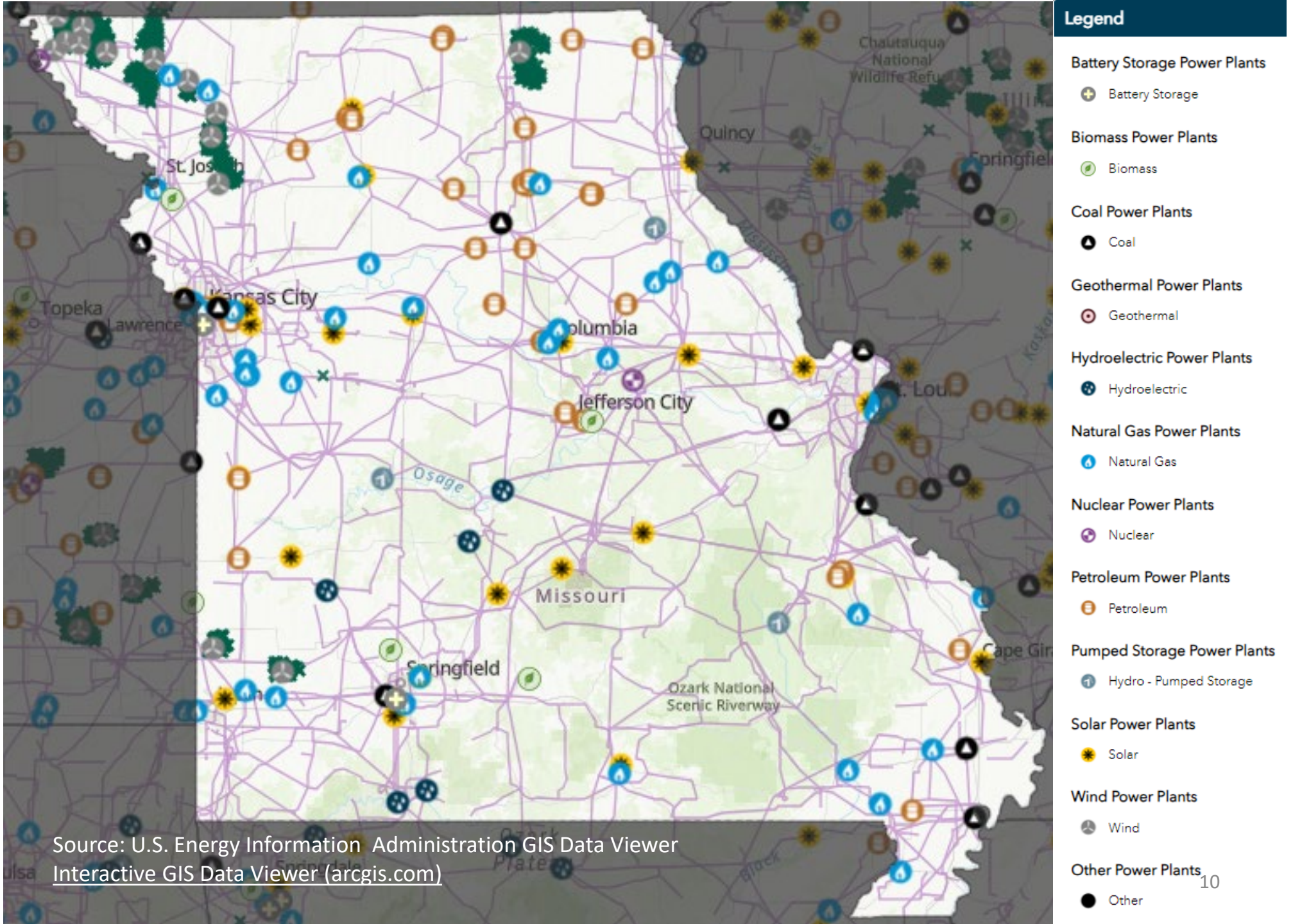
Missouri – Regional Transmission Organizations SPP & MISO





Source: U.S. Energy Information Administration GIS Data Viewer
Interactive GIS Data Viewer (arcgis.com)

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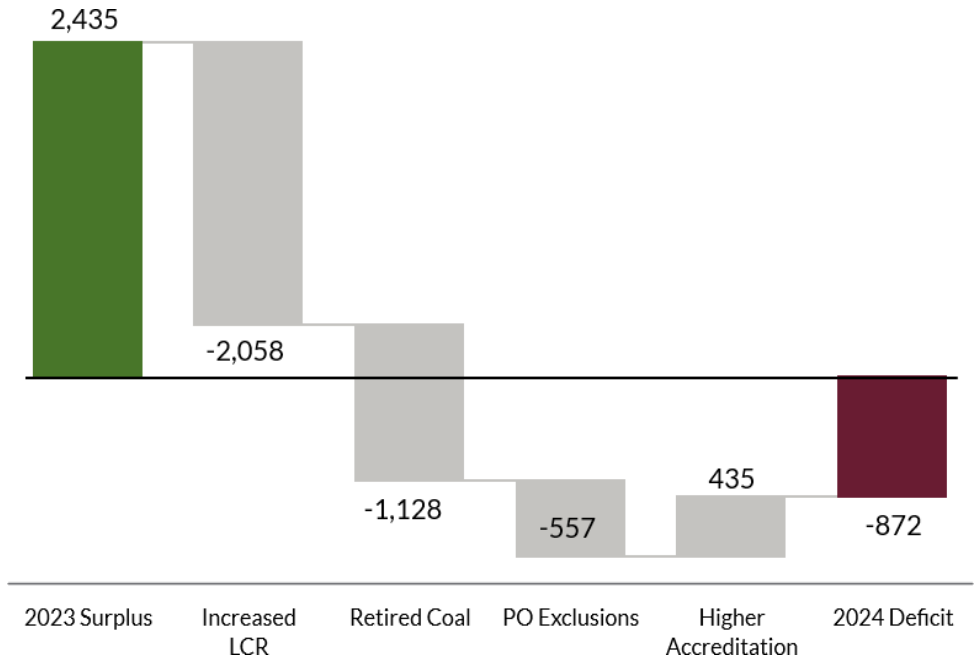
Missouri experienced a capacity shortfall in the 2024 MISO Planning Resource Auction in the Fall and Spring seasons

2024 Planning Resource Auction Clearing Prices

All Zones (except Zone 5)	Zone 5:
• **Summer:** $30/MW-day	• $30/MW-day
• **Fall:** $15/MW-day	• $719.81/MW-day
• **Winter:** $0.75/MW-day	• $0.75/MW-day
• **Spring:** $34.10/MW-day	• $719.81/MW-day

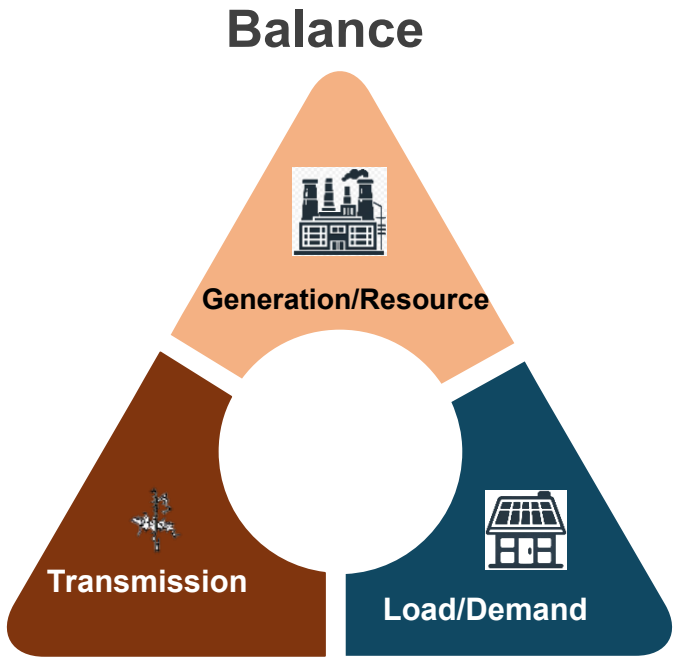
Year-Over-Year Changes in Zone 5 – Fall Season



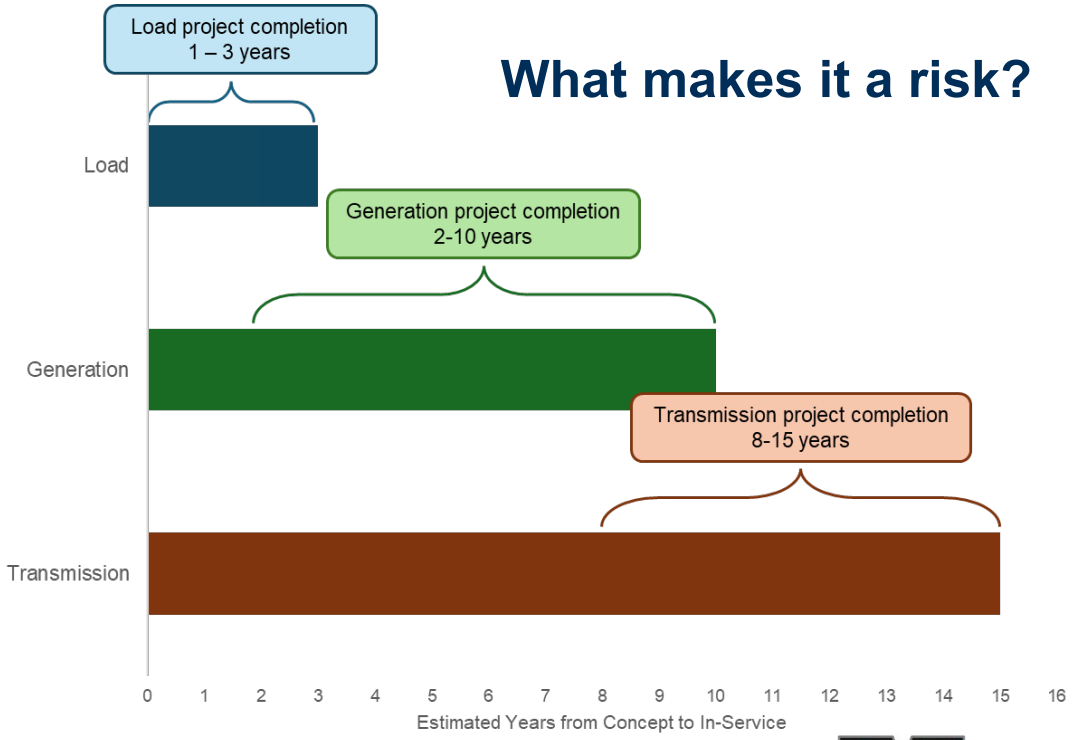
PO: Planned Outage

Resource Adequacy

Generally speaking, resource adequacy is the ability of the electric system to meet the energy needs of electricity consumers. This means having sufficient generation to meet projected electric demand - FERC

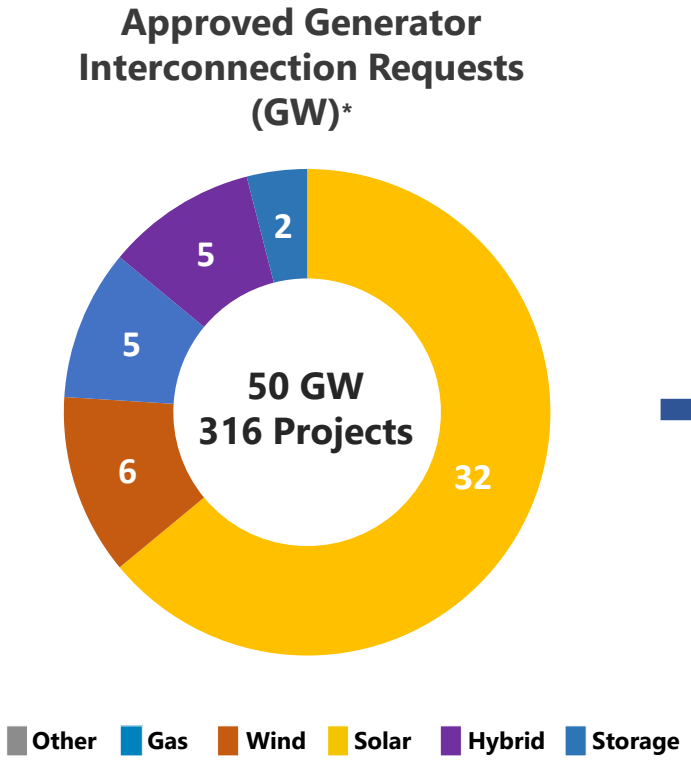


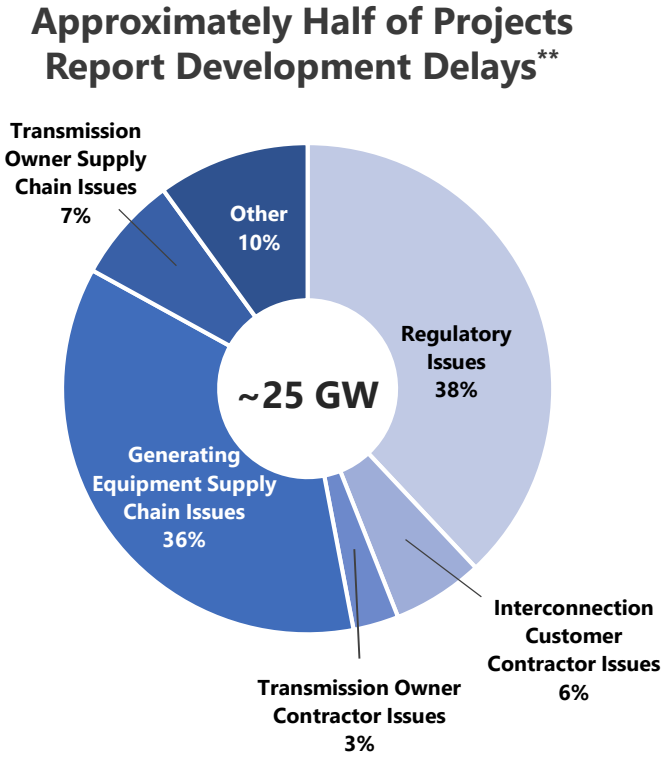
What makes it a risk?



MIDWEST RELIABILITY ORGANIZATION

Many of the already approved new resources are experiencing delays in getting online

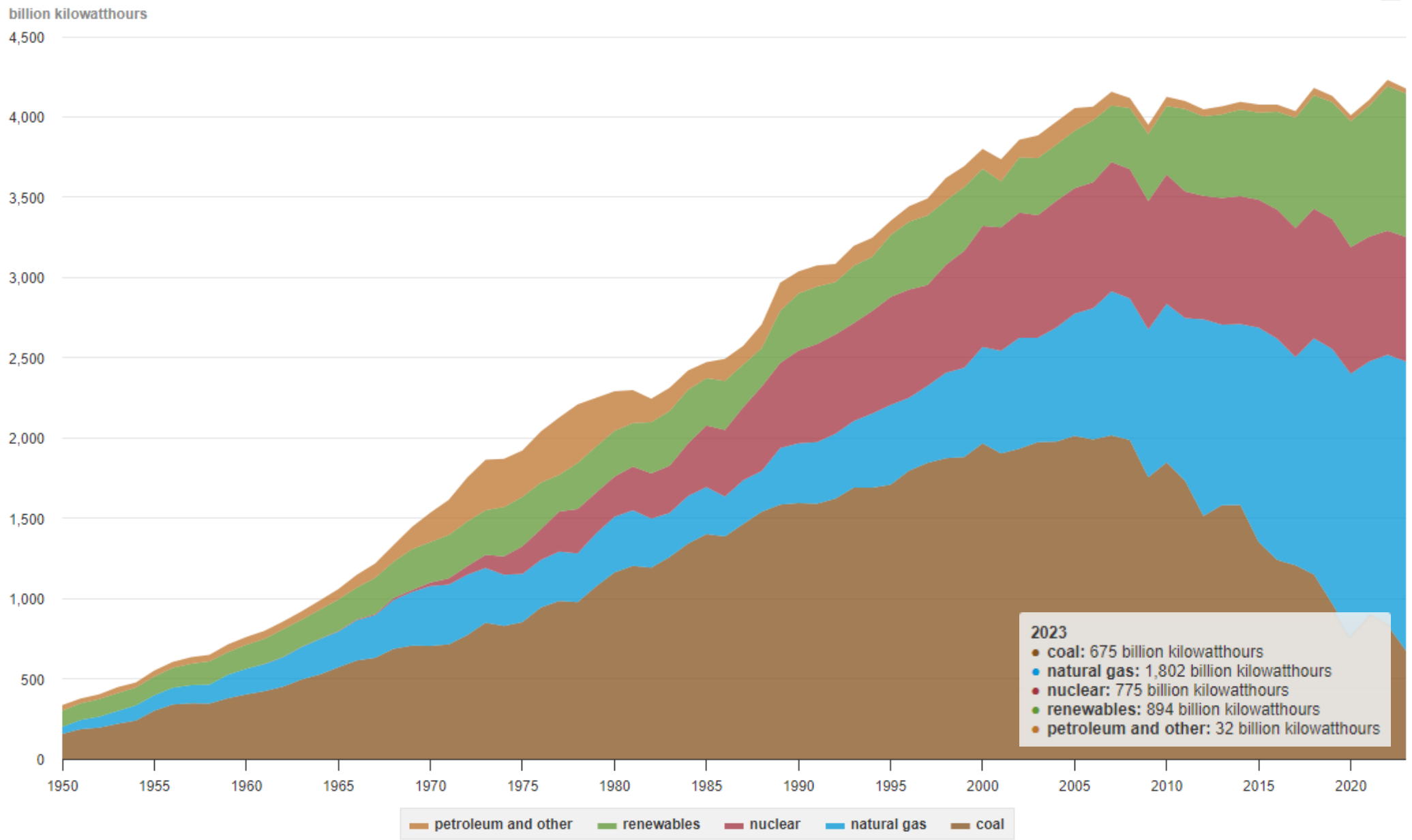




50 GW of resources approved through MISO's interconnection processes are in or awaiting construction with approximately 50% already signaling a delay with an average of 650 days to commercial operation

*Queue data as of June 1, 2024
** Reasons for delay based on responses from a subset of delayed projects

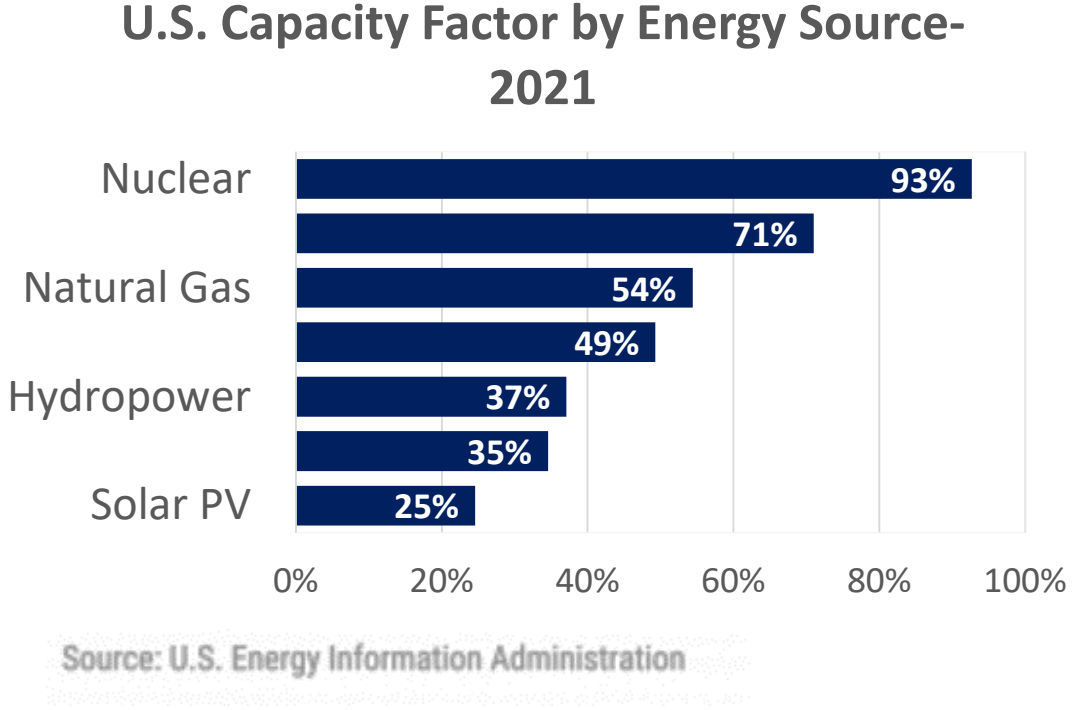
U.S. electricity generation by major energy source, 1950-2023

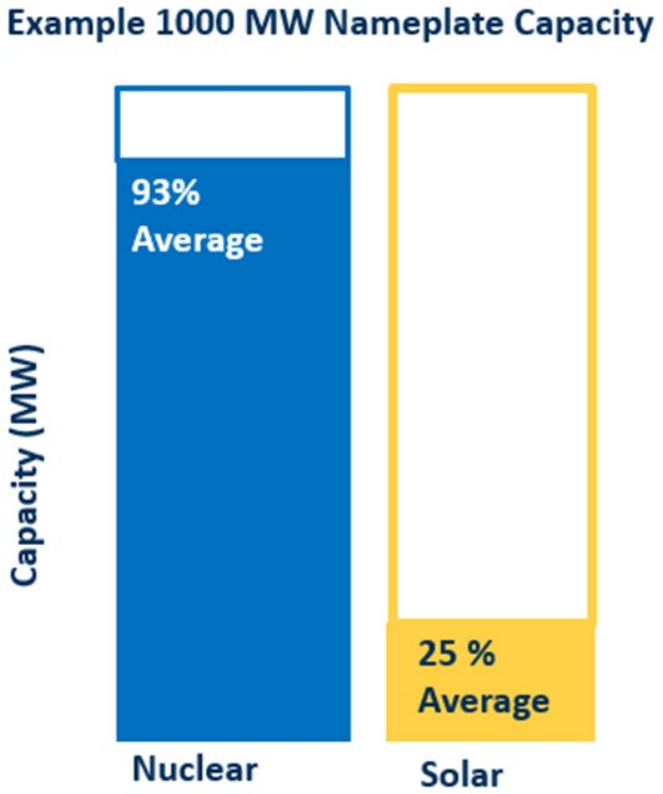


eia Data source: U.S. Energy Information Administration, *Monthly Energy Review* and *Electric Power Monthly*, February 2024, preliminary data for 2023
Note: Includes generation from power plants with at least 1 megawatt electric generation capacity.

Not All Megawatts (MWs) Are Created Equal

Capacity factor: Energy output/ theoretical maximum capacity



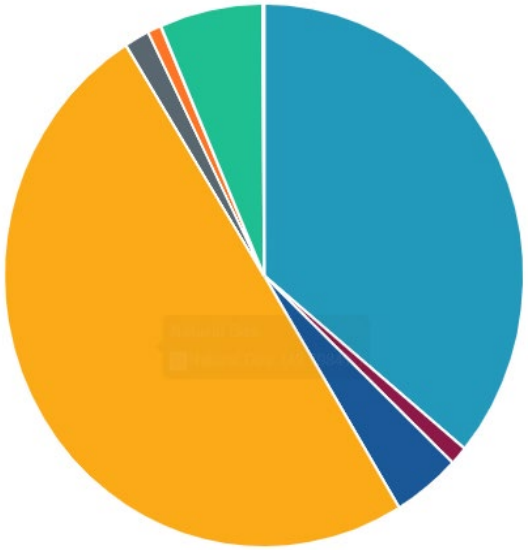


Public > Integrated Marketplace > IM Charts > Integrated Marketplace Generation Mix

Integrated Marketplace Generation Mix for 2024-08-26 14:00:16 (Central Time)

Pie chart view of current generation mix percentage by fuel type.

- Coal: (35.9835%)
- Diesel Fuel Oil: (1.1075%)
- Hydro: (4.2002%)
- Natural Gas: (49.7984%)
- Nuclear: (1.5475%)
- Solar: (0.8555%)
- Waste Disposal Services: (0.0248%)
- Wind: (6.3876%)
- Waste Heat: (0.0000%)
- Other: (0.0950%)

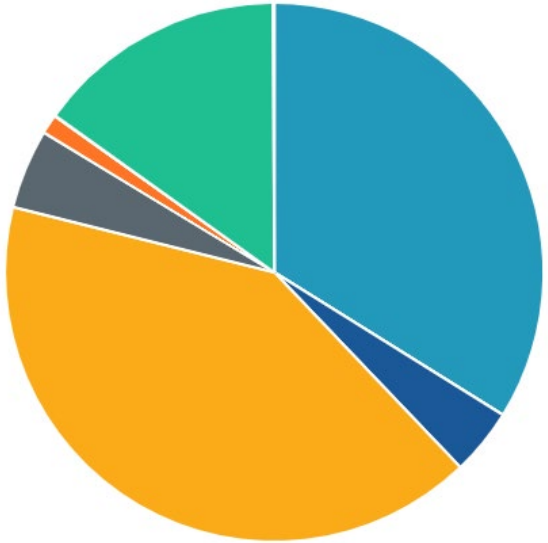


Public > Integrated Marketplace > IM Charts > Integrated Marketplace Generation Mix

Integrated Marketplace Generation Mix for 2024-08-28 10:10:11 (Central Time)

Pie chart view of current generation mix percentage by fuel type.

- Coal: (33.8684%)
- Diesel Fuel Oil: (0.0099%)
- Hydro: (3.9878%)
- Natural Gas: (41.0255%)
- Nuclear: (4.7874%)
- Solar: (1.1625%)
- Waste Disposal Services: (0.0250%)
- Wind: (15.0706%)
- Waste Heat: (0.0000%)
- Other: (0.0629%)

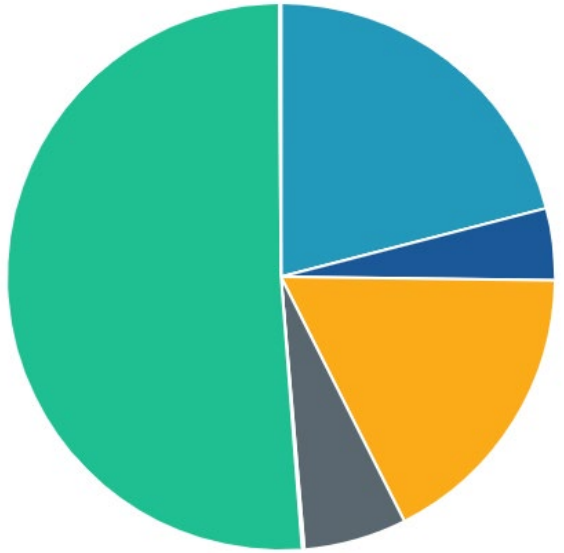


Public > Integrated Marketplace > IM Charts > Integrated Marketplace Generation Mi

Integrated Marketplace Generation Mix for 2024-09-09 08:15:12 (Central Time)

Pie chart view of current generation mix percentage by fuel type.

- Coal: (20.9684%)
- Diesel Fuel Oil: (0.0000%)
- Hydro: (4.2415%)
- Natural Gas: (17.3532%)
- Nuclear: (6.0699%)
- Solar: (0.1076%)
- Waste Disposal Services: (0.0322%)
- Wind: (51.1437%)
- Waste Heat: (0.0000%)
- Other: (0.0836%)



Long Term Load Growth

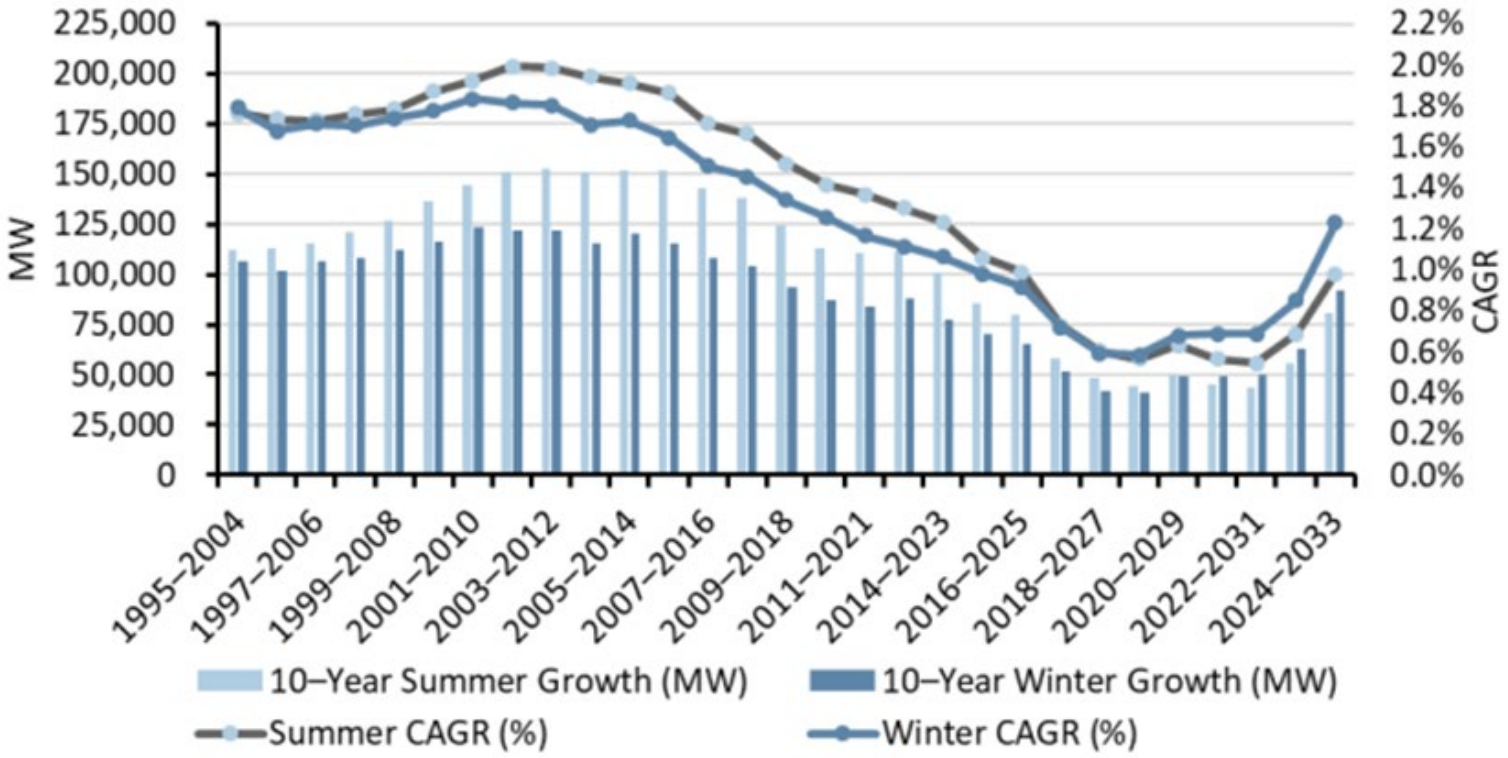


Figure 25: The 10-Year Summer and Winter Peak Demand Growth and Rate Trends

DIVE BRIEF

US electricity load growth forecast jumps 81% led by data centers, industry: Grid Strategies

Data from FERC Form 714 shows grid planners expect nationwide power demand to grow 4.7% over the next five years, compared to a previous estimate of 2.6%.

Electrification creates shift in time of peak demand from summer to winter.

Economic Development and Load Growth Trends

- Driven by:
  - On-shoring of all sectors; Manufacturing
  - Data Centers/AI
  - Electrification

National Headlines

UTILITY DIVE

DIVE BRIEF

Amazon announces small modular reactor deals with Dominion, X-energy, Energy Northwest

The digital retail and web services company led a $500 million investment in X-energy and will support the development of more than 600 MW of SMR capacity in Washington and Virginia.

Published Oct. 16, 2024

By Brian Martucci

UTILITY DIVE

DIVE BRIEF

Rising demand could drive US wholesale electricity prices 19% higher by 2028: ICF

Electricity demand is expected to rise in every region of the U.S., but "the largest increase by far" is projected in the mid-Atlantic region, where demand could grow 68% by 2050, ICF said.

Published Sept. 18, 2024

News & Analysis • Platts

SPP proposes separate planning reserve margins for summer, winter

Ronnie Turner • Commodity Insights
Wednesday, October 16, 2024 3:21 PM ET

A+ A-

The Southwest Power Pool has asked federal regulators to approve tariff revisions establishing separate planning reserve margins for its member utilities in the summer and winter seasons instead of having a single reserve margin apply to both seasons.

Planning reserve margins are the amount of backup capacity utilities must maintain as a safeguard against unforeseen grid conditions. The SPP's Regional State Committee and board of directors in August approved a minimum 36% planning reserve margin for the 2026–2027 winter season and a 16% margin for summer 2026.

The increase in the winter reserve margin from the current 15% summer margin will help the region better prepare for extreme weather events, such as the increasingly common winter storms that lead to higher-than-normal power demand, SPP said in an Aug. 6 release. It was the first time SPP had set a separate winter reserve margin.

News & Analysis • Extra

Google, Kairos Power to deploy 500 MW of advanced nuclear for datacenters

Abbie Bennett • Commodity Insights
Monday, October 14, 2024 5:32 PM ET

News & Analysis • Extra

Datacenter power demand projections overshadow sustainability – panelists

Nushin Huq • Market Intelligence
Tuesday, October 15, 2024 3:58 AM ET

A+ A-

Power-hungry datacenters, which are pushing electricity demand growth predictions higher than seen in decades, are changing the energy landscape as reliability overtakes sustainability in the boardroom.

"Fewer CEOs [are] talking about net-zero," Dave Stangis, partner and chief sustainability officer at Apollo Global Management Inc., said Oct. 8 at the Infocast Clean Energy Investment Summit in Houston. "We're seeing lots of opportunity in energy broadly. The cleaner that energy, the more excitement there is behind it, but from a policy perspective, it still has to pencil out."

Corporate executives are now more focused on energy solutions that provide reliable power around the clock, Stangis and other investors said during a panel discussion highlighting how anticipated rising demand for power is altering clean energy investment strategies.

Large datacenter operators are still looking for clean energy, according to Nicholas Sorenson, associate director at infrastructure investment company Igneo Infrastructure Partners. But that can hinge on whether

News & Analysis • Extra

Entergy to power $5B Meta datacenter in Louisiana with new gas capacity

Abbie Bennett • Commodity Insights
Thursday, November 21, 2024 5:10 PM ET

A+ A-

Entergy Louisiana LLC filed an application for two new gas-fired power plants at a northern Louisiana site planned for a $5 billion Meta Platforms Inc. datacenter, a state regulator confirmed Nov. 21.

One of the challenges of building datacenters is that they need access to the power grid and fiber-optic infrastructure. A datacenter being built near a large power plant does not help if the rest of the needed infrastructure is not sufficient, panelists said.

Microsoft Corp.'s plan to use Constellation Energy Corp.'s 890-MW Three Mile Island-1 nuclear unit was a unique opportunity, they agreed, noting that more companies are looking to use large-scale microgrids.

"Boy, how things have changed over the past couple of years," Anand said. "It's not surprising when you look at power demand growth that is expected to double over the next 10 to 15 years. At the same time, the grid is more fragile than ever."

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National Headlines

S&P Capital IQ PRO

NERC updating its peak demand forecasts to account for new datacenter demand

Monday, October 28, 2024 3:32 PM ET

By John Siciliano

The nation's grid reliability watchdog is preparing to significantly raise its peak demand forecast to reflect the ever-increasing number of datacenters slated to be added to the grid in the coming years.

John Moura, North American Electric Reliability Corp.'s director of reliability assessment, discussed the risk that rising electricity demand poses to grid reliability during an Oct. 24 energy and technology forum held by the US Energy Association in Washington.

S&P Capital IQ PRO

RRA REGULATORY FOCUS

Grid additions slow YOY in US as reliability concerns, datacenter demand rise

Wednesday, October 30, 2024 1:04 PM ET

By Jim O'Reilly
Commodity Insights

The total transmission rate base for a group of 79 electric utilities across all regions of the US rose 6.2% to $172.02 billion in 2023 from $161.96 billion in 2022, marking the second consecutive year of slowing growth for the nationwide group.

Jefferies

Equity Research
November 20, 2024

NORTH AMERICA | Power & Utilities

PowerPoints: Datacenters, Midstream M&A, EIX No Fire, SRE, Offshore Wind & TXNM

Meta confirmed by as the unnamed customer for new data centers w/ gas turbines. EIX files updated Mountain Fire report describing complaint as dismissed; expected positive. SRE mgmt meetings very constructive. Offshore wind risks with monopile season. TXNM settlement.

Data Centers: Louisiana confirms large new Meta data center powered by natural gas. Louisiana Public Service Commissioner Foster Campbell confirmed to USA Today a $5Bn future investment by Meta in Holly Ridge Louisiana for the previously disclosed complex. The data centers will be powered primarily by future combined cycle natural gas with optionality for clean energy in the future. Investors have speculated on who the customer was and our initial thought was that it was not a data center before new permitting and cite information was made public due to the 300-500 full time job data point. The scale of the data center in non-tier one market is a strong positive datapoint about the regional diversity of data centers.

Investors have been eagerly awaiting the first sizable hyperscale data center announcement with natural gas generation and it is now official. The geographic diversification of data centers to less traditional markets, willingness to increase carbon emissions, and alignment with regulated utilities are important themes from our recent EEI meetings and we expect the trend to continue. Investors are realizing that the data centers will pursue 'all of the above' energy sourcing strategies rather than just focusing on merchant nuclear plants. This is positive for a wide range of regulated utilities able to own generation and we continue to focus on the 'medium cap' PPL, NI, OGE, and EVRG as examples that have more leverage to the thesis. This is also favorable for natural gas turbine provider & servicer GE Vernova (GEV).

S&P Capital IQ PRO

Integrated resource plans, rates under pressure from soaring demand

Wednesday, November 13, 2024 10:40 AM ET

By Tom Tiernan

With electricity demand forecasts rising to unprecedented levels due to datacenters, electric vehicles and cryptocurrency, integrated resource plans and traditional rate design for electric utilities may need to be changed to account for the new dynamics, speakers said at an industry conference.

Large electricity users are seeking larger amounts of power in shorter time frames than before, and possibly colocating with generation assets. That is creating a challenge for utilities and regulators to sort out who pays for infrastructure investments, said Julie Fedorchak, a member of the North Dakota Public Service Commission and president of the National Association of Regulatory Utility Commissioners (NARUC).

The traditional approach to rate design, with costs spread among all utility customers, "is pretty ill-equipped for addressing some of the new challenges with large loads," Fedorchak said Nov. 10 at NARUC's annual meeting in Anaheim, California.

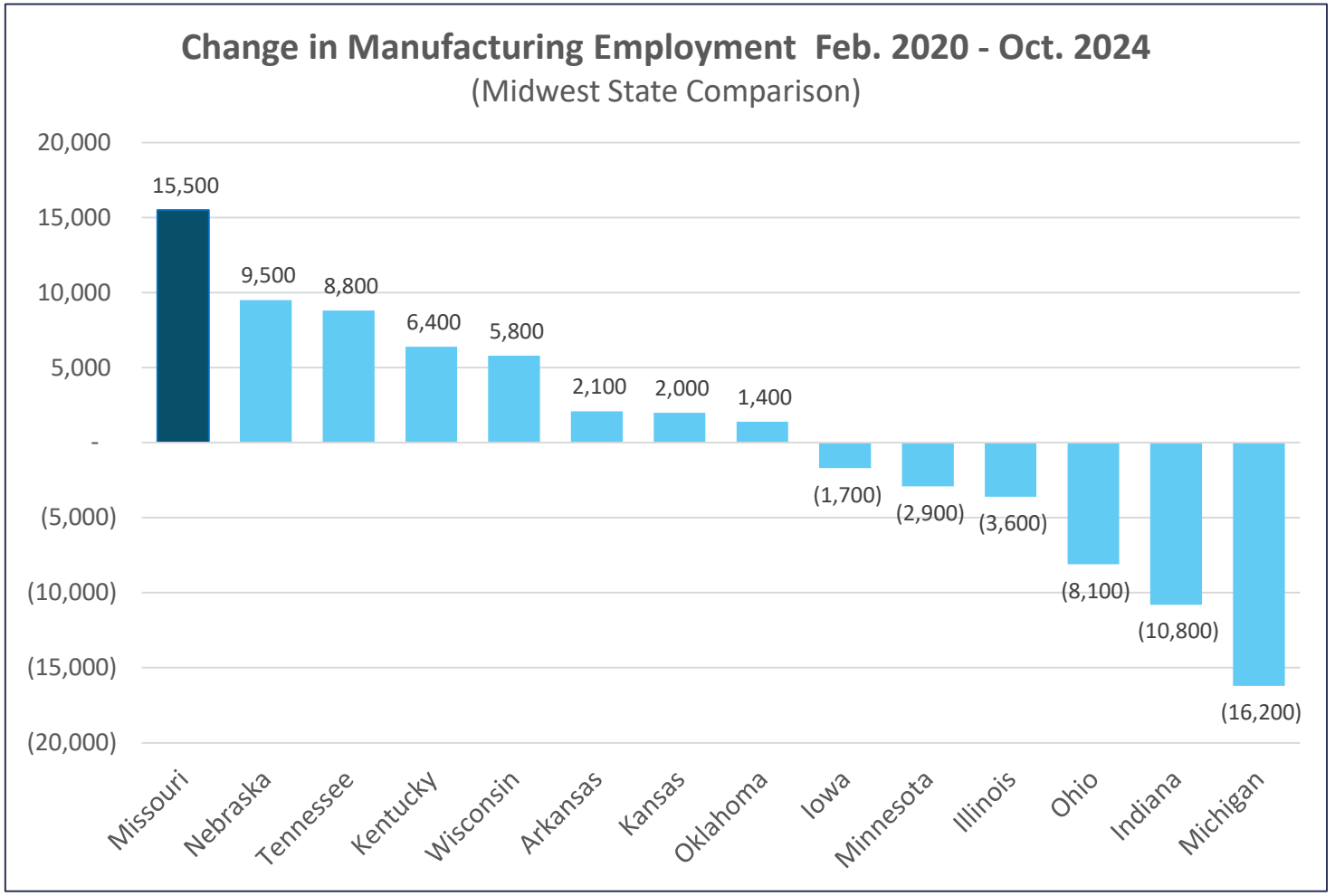
Fedorchak, a Republican who is leaving the PSC after being elected to serve in the US House of Representatives, said state regulators need to work with consumer advocates and others to see that electric utility rates do not skyrocket as infrastructure investments are made to meet new demand.

Utility rates need to stay affordable to avoid a so-called death spiral for utilities, where customers who can afford to add their own generation resources will "unplug from the grid" and impose higher costs on remaining utility customers, said Christopher Ayers, executive director of the North Carolina Utilities Commission Public Staff, which represents consumer interests at the agency. If utility rates are not kept in check, "the market will see an opportunity and the market will respond" by encouraging customers to leave the utility grid, Ayers said.

The trend of datacenter growth and soaring load forecasts, along with utility customers adding distributed energy resources behind their meter, is putting a lot of pressure on the regulatory structure and utility integrated resource plans, said David Owens, CEO of consulting firm Da'Vision & Strategies. "Should the IRP model be modified?" asked Owens, a former executive vice president at the Edison Electric Institute, the investor-owned utility advocacy group.

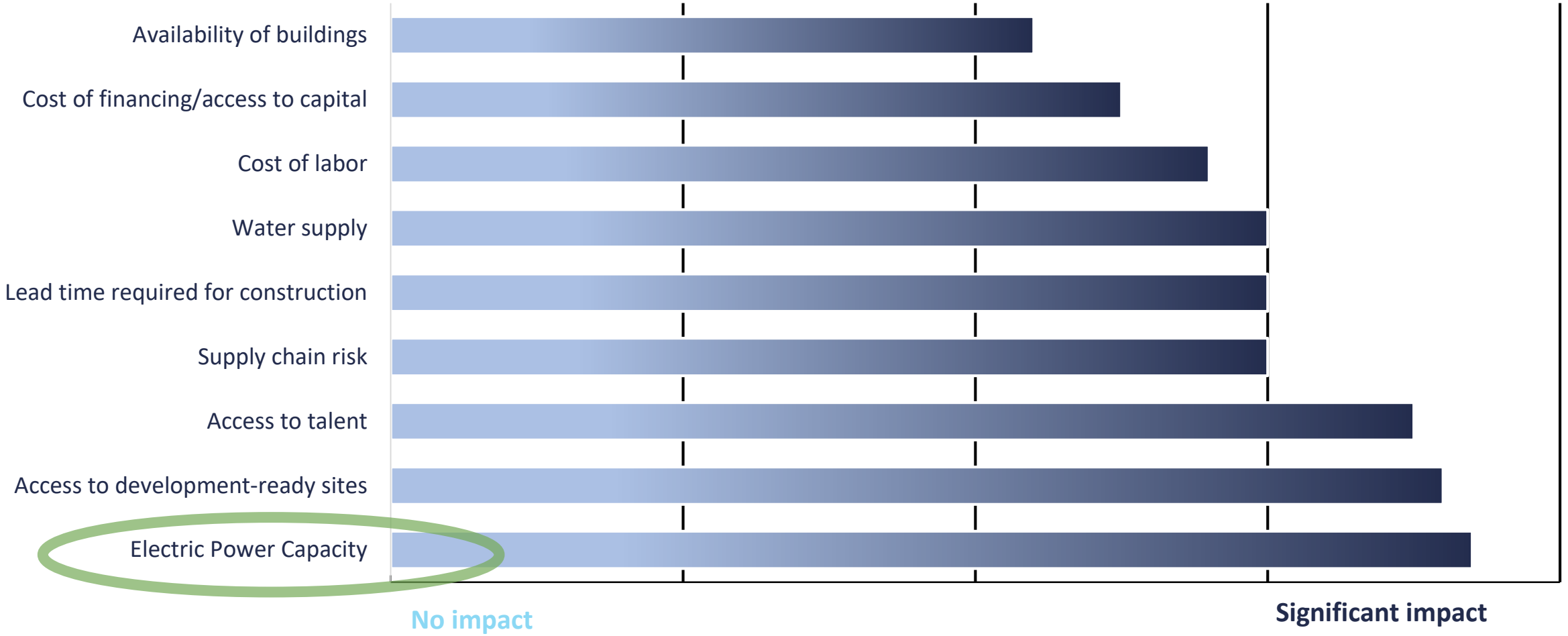
Manufacturing Growth: Peer State Comparison

- The 15,500 new manufacturing jobs created in Missouri since Feb. 2020 tops all our Midwest peer states
- Nationally, Missouri ranks 6th in manufacturing employment growth



Source: Bureau of Labor Statistics

Factors in Industrial Projects

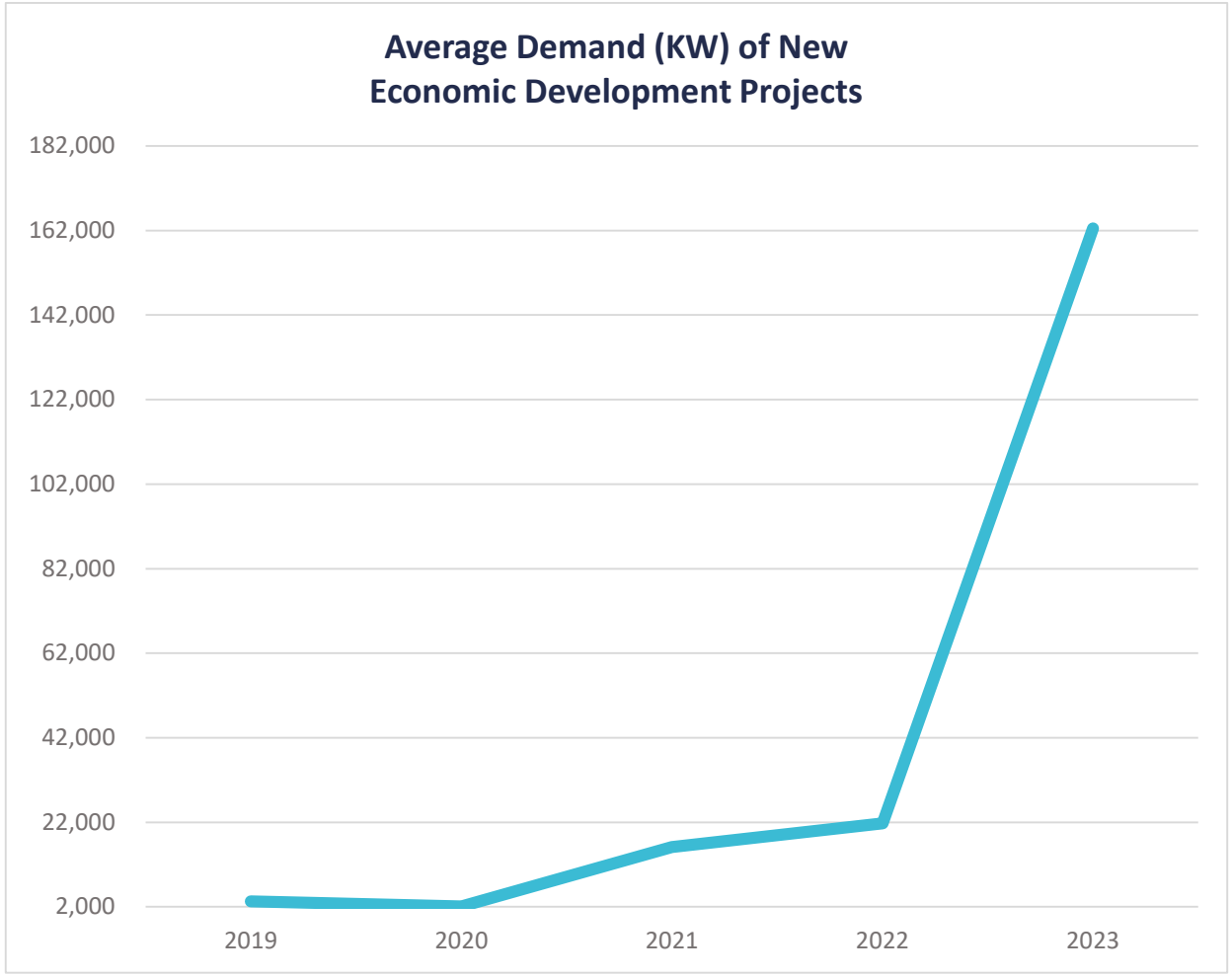


Source: Site Selectors Guild; The State of Site Selection, 2024

Increased Demand from Economic Development Projects

*There has been a **significant increase** in expected demand load since the pandemic.*

- Project size is increasing rapidly
  - In 2019, average size was 3.2 MW
  - In 2023, average size was 162.5 MW



Data courtesy of Ameren

Jobs	Capex	Site Acreage Requirement	Building Square Footage Requirement	Electric Requirements
1,500	$5,200,000,000	820		480 MW 100% Renewable
650	$3,300,000,000	2,200		1.28 GW
675	$2,000,000,000	260		1 GW 100% Renewable
3,240	$1,500,000,000	200		80 MW
388	$550,000,000	300	1,500,000	12 MW
802	$199,000,000		760,000	15 MW
		150		200 MW
150	$800,000,000	175		500 MW
205	$599,000,000	30	450,000	50 MW
100	$320,000,000	650		45 MW
200	$140,000,000	50	526,262	9.5 MW portion attributed to renewables
308	$121,000,000	50	275,000	12 MW
5,000	TBD	1,000		1.2 GW by 2042
1,000	$1,000,000,000	150		400 MW by 2028
326	$455,000,000	80		100 MW

What about Missouri Utilities?

S&P Capital IQ PRO

Ameren continues to see load growth, with 10-year investment pipeline of $55B

Thursday, November 7, 2024 5:52 PM ET

By Nushin Huq
Market Intelligence

Ameren Corp. has agreements in place for about 350 MW of new load from datacenters, manufacturers and other industrial customers, 90% of which is located in Missouri, executives said Nov. 7.

"Over the last few months, our economic development pipeline of potential additional demand has doubled in size, and we are making meaningful progress with several potential customers," Martin Lyons, Ameren president and CEO, told investors during the company's third-quarter earnings call.

Announced new load includes a 250-MW datacenter expected to be in service by 2026 in Missouri and about 100 MW of additional load from manufacturing, smaller datacenters and other industries by 2028.

What about Missouri Utilities?

NEWS RELEASE
FOR IMMEDIATE RELEASE

evergy

Evergy announces two new 705 MW high-efficiency natural gas plants

Two plants to be built in Kansas will help meet growing energy needs, support reliability

KANSAS CITY, MO., Oct. 21, 2024 – Evergy, Inc. (NASDAQ: EVRG) today announced it will invest in two new 705 megawatt (MW) combined-cycle natural gas plants that will be built in Kansas. The plants are expected to begin operating in 2029 and 2030.

"High-efficiency modern natural gas plants will meet the electricity needs for our region's growing economy. These plants also will bring good paying jobs and tax dollars to Kansas," said David Campbell, Evergy Chairman, President and Chief Executive Officer. "Dispatchable natural gas is an important resource within Evergy's growing and diverse energy portfolio, complementing our planned investment in wind and solar resources and supporting our commitment to affordable, reliable and sustainable electricity."

The two new plants will provide flexible generation that pairs well with the abundant renewable resource potential in Evergy's service area and will meet stringent emissions standards. The plant in Sumner County is expected to begin providing electricity in 2029, and the plant in Reno County is expected to be in service in 2030.

"Kansas is experiencing record economic growth, and Evergy is prepared to deliver the reliable, affordable, and sustainable energy needed." Kansas Gov. Laura Kelly said. "Evergy's multi-billion dollar investment brings direct value to the Hutchinson and Sumner County areas in jobs and tax dollars. It also ensures Kansas can continue to invite business growth that benefits the entire state."

The natural gas plants will represent a major investment in the state's energy infrastructure that will serve customers for 40 years. During construction, more than 500 jobs are anticipated for each plant. After a 10-year exemption, each plant will provide more than $500 million in property tax revenues over its service life and will bring to the communities 20-40 skilled craft jobs that pay more than $90,000 annually.

"We're pleased to make this investment in communities we serve," Campbell said. "As Kansas and Missouri are seeing historic opportunities for attracting new businesses to our area, Evergy is committed to providing the affordable, reliable and sustainable energy our customers need. This growth benefits all customers by helping to hold down prices."

Kansas' success in drawing new and expanding businesses has driven the need for more electric generation. During the 2024 Kansas legislative session, a bipartisan effort resulted in legislation that enhances Kansas policies related to electric infrastructure investment, which will help Kansas compete

Kansas' success in drawing new and expanding businesses has driven the need for more electric generation. During the 2024 Kansas legislative session, a bipartisan effort resulted in legislation that enhances Kansas policies related to electric infrastructure investment, which will help Kansas compete with other states for investment and ultimately save customers money.

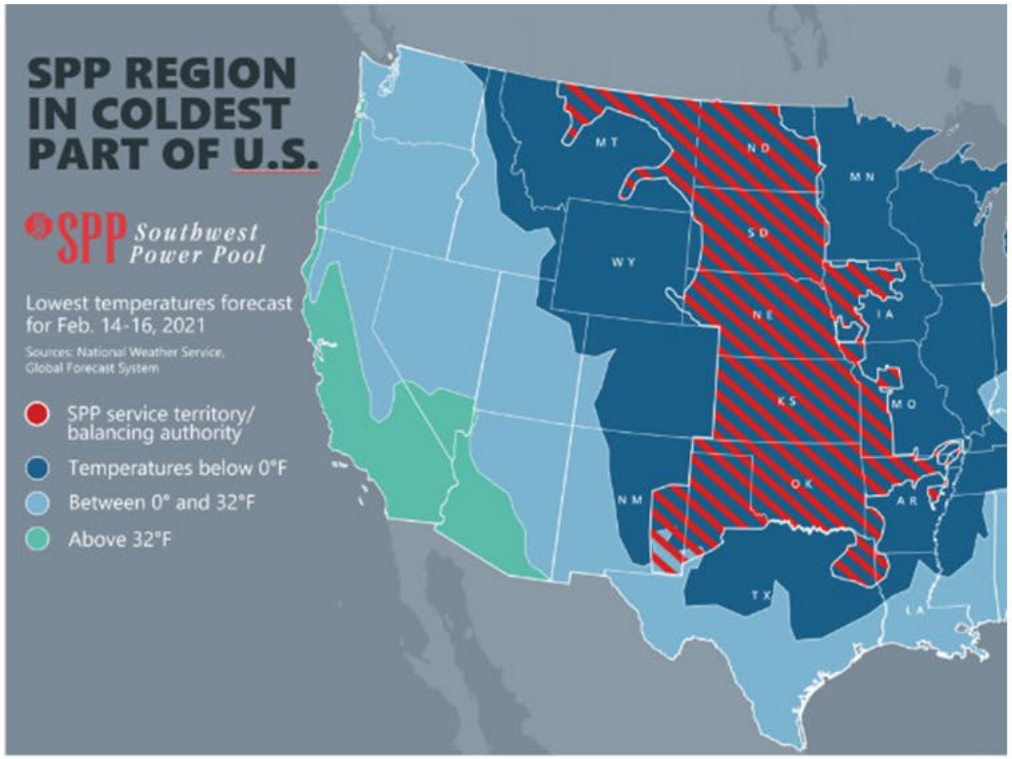
Dan Hawkins, Speaker of the House, said, "We are pleased that a legislative policy we championed is helping ensure a strong energy future for the state of Kansas. I look forward to seeing the benefits this brings in terms of jobs, economic growth and energy security for our state for years to come."

Senate President Ty Masterson, added, "Kansans depend on reliable electricity each and every day to power their lives and their businesses. These investments by a long-time Kansas energy company will make our state even more attractive to those wanting to live, work and grow a business in our great state."

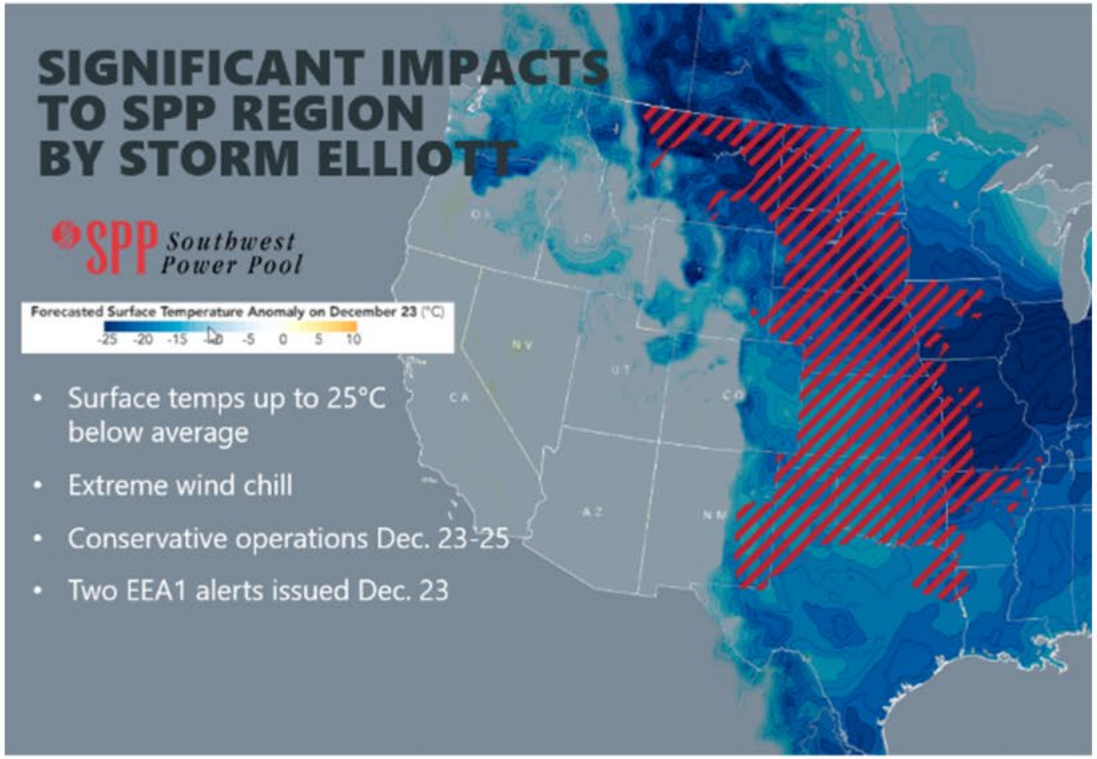
Earlier this year, Evergy filed with the Kansas Corporation Commission and the Missouri Public Service Commission its 20-year plan for meeting customers' energy needs, which included these generation plants. With strong economic growth expected in Kansas and Missouri over the next decade, The plan maps out a responsible generation transition as Evergy prepares for growing energy demand and for older plants to retire. It ensures customers' needs are met today and in the future.

Seasonal Weather Concerns

TWO "100 YEAR STORMS" IN TWO YEARS



Winter Storm Uri
Feb. 2021



Winter Storm Elliott
Dec. 2022

Seasonal Weather Concerns: FERC - November 21, 2024

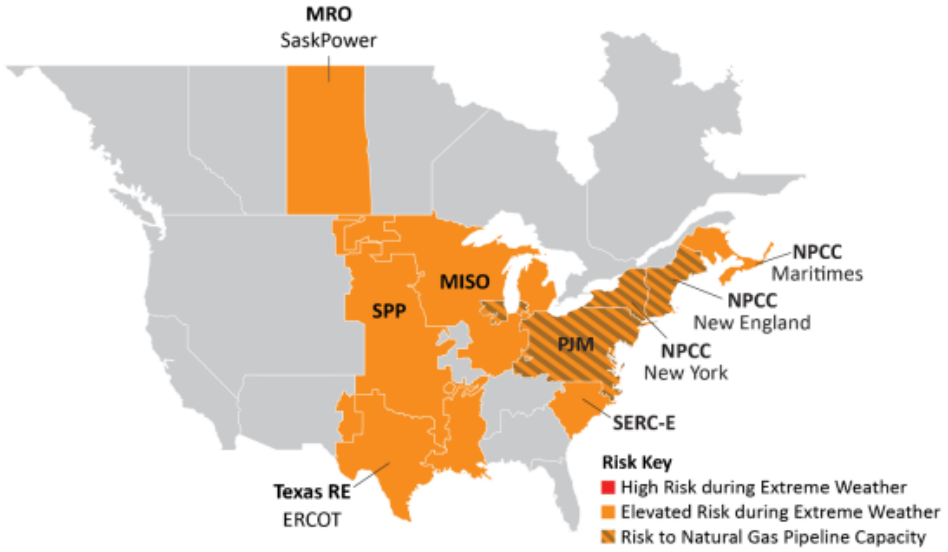


Figure 1: Winter Reliability Risk Area Summary

Seasonal Risk Assessment Summary	
High	Potential for insufficient operating reserves in normal peak conditions
Elevated	Potential for insufficient operating reserves in above-normal conditions
Normal	Sufficient operating reserves expected

Key Findings

- Slightly colder conditions expected
  - Lower temperatures likely compared to last winter
  - Slightly elevated natural gas prices expected compared to previous winter with higher forecasted natural gas demand
- Resources and operating reserves adequate in all regions for normal winter conditions.
  - Possible reliability challenges in MISO, ERCOT, SPP, and SERC-East in extreme winter conditions

Missouri is not Alone

- States around the country are grappling with similar challenges
- In a recent Regulatory Assistance Project Peer-to-Peer workshop at the Mid-America Regulatory Conference there was consensus that all states are facing the same general challenges and there is a need to do things different
- Hard conversations about approaches to Integrated Resource Planning and Resource Adequacy are happening throughout the country

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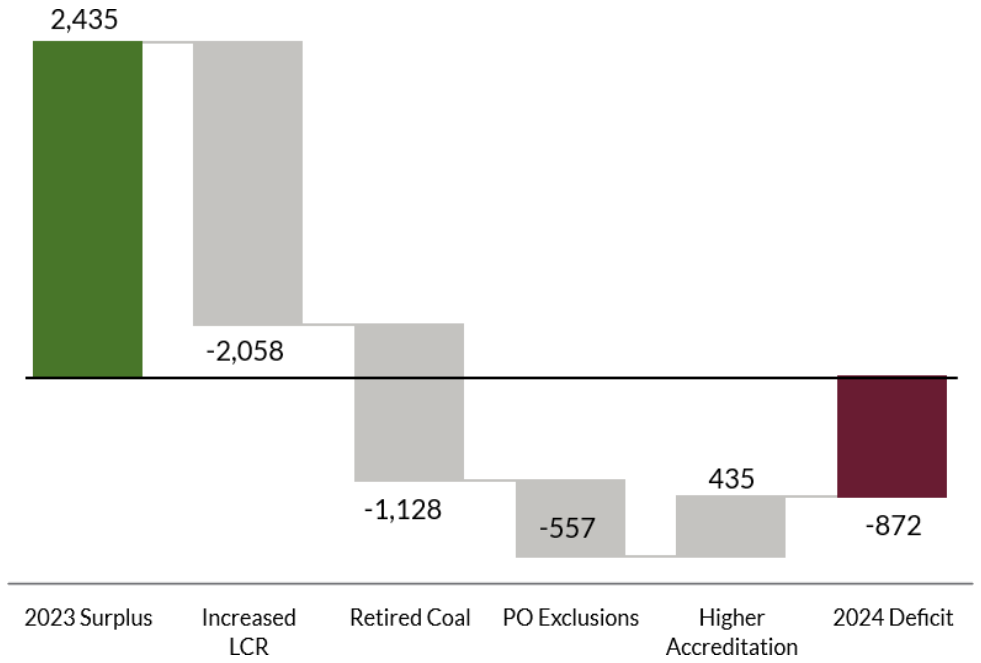
Missouri experienced a capacity shortfall in the 2024 MISO Planning Resource Auction in the Fall and Spring seasons

2024 Planning Resource Auction Clearing Prices

All Zones (except Zone 5)	Zone 5:
• **Summer:** $30/MW-day	• $30/MW-day
• **Fall:** $15/MW-day	• $719.81/MW-day
• **Winter:** $0.75/MW-day	• $0.75/MW-day
• **Spring:** $34.10/MW-day	• $719.81/MW-day

Year-Over-Year Changes in Zone 5 – Fall Season



PO: Planned Outage

Other RTOs, Such as PJM, also experienced capacity shortfalls in their auctions.

- 2025-2026 PJM capacity costs increased by $4.4 Billion
- Results blamed in part on 2.7 GW capacity reduction
- PJM also attributes increase to market design flaws – definitions of supply and demand
- For Missouri and surrounding states, it shows we're not alone. It also means we'll be competing in the supply chain for materials and skilled labor to meet dispatchable generation needs.

Resource Adequacy Summit Feedback

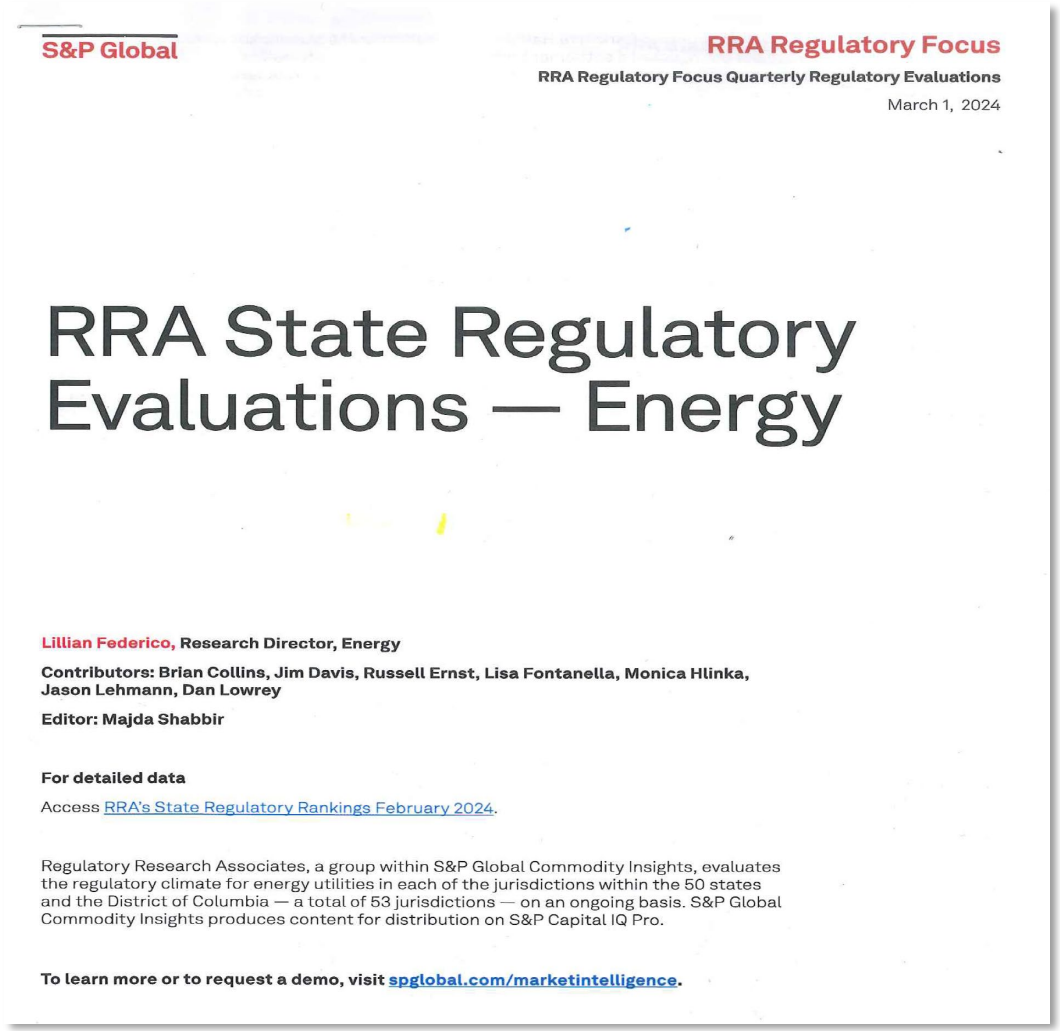
"This is an opportunity in front of us, and if we think about things in a different way, whether it's just the process and how we plan for these things and how we as an industry are approaching them, we're going to succeed. But if we don't think about them in a new way, these opportunities really are aren't going to wait for Missouri to figure it out, they're going to go somewhere else, and they're going to put their capital in other states…"

-Rob Dixon-

"We simply don't have the time associated with the past, I think, going forward, and we all need to lock arms and figure out how we're going to keep the lights on. Its not just the electric utilities that have that responsibility."

-John Twitty-

Missouri Market Environment



S&P Global

RRA Regulatory Focus

RRA Regulatory Focus Quarterly Regulatory Evaluations

March 1, 2024

RRA State Regulatory Evaluations — Energy

Lillian Federico, Research Director, Energy

Contributors: Brian Collins, Jim Davis, Russell Ernst, Lisa Fontanella, Monica Hlinka, Jason Lehmann, Dan Lowrey

Editor: Majda Shabbir

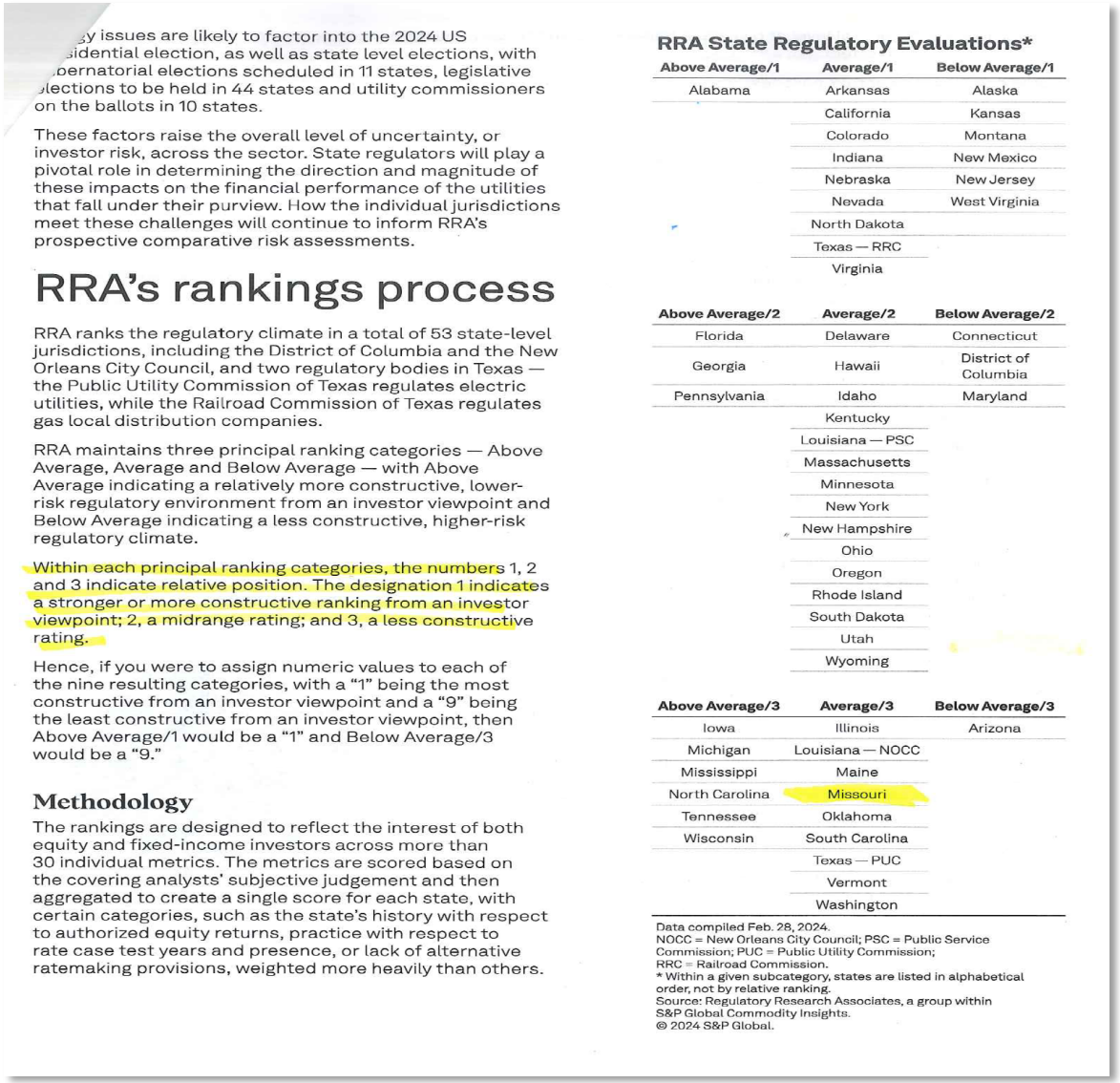
For detailed data

Access RRA's State Regulatory Rankings February 2024.

Regulatory Research Associates, a group within S&P Global Commodity Insights, evaluates the regulatory climate for energy utilities in each of the jurisdictions within the 50 states and the District of Columbia — a total of 53 jurisdictions — on an ongoing basis. S&P Global Commodity Insights produces content for distribution on S&P Capital IQ Pro.

To learn more or to request a demo, visit spglobal.com/marketintelligence.

Missouri Market Environment



...gy issues are likely to factor into the 2024 US ...sidential election, as well as state level elections, with ...bernatorial elections scheduled in 11 states, legislative ...lections to be held in 44 states and utility commissioners on the ballots in 10 states.

These factors raise the overall level of uncertainty, or investor risk, across the sector. State regulators will play a pivotal role in determining the direction and magnitude of these impacts on the financial performance of the utilities that fall under their purview. How the individual jurisdictions meet these challenges will continue to inform RRA's prospective comparative risk assessments.

RRA's rankings process

RRA ranks the regulatory climate in a total of 53 state-level jurisdictions, including the District of Columbia and the New Orleans City Council, and two regulatory bodies in Texas — the Public Utility Commission of Texas regulates electric utilities, while the Railroad Commission of Texas regulates gas local distribution companies.

RRA maintains three principal ranking categories — Above Average, Average and Below Average — with Above Average indicating a relatively more constructive, lower-risk regulatory environment from an investor viewpoint and Below Average indicating a less constructive, higher-risk regulatory climate.

Within each principal ranking categories, the numbers 1, 2 and 3 indicate relative position. The designation 1 indicates a stronger or more constructive ranking from an investor viewpoint; 2, a midrange rating; and 3, a less constructive rating.

Hence, if you were to assign numeric values to each of the nine resulting categories, with a "1" being the most constructive from an investor viewpoint and a "9" being the least constructive from an investor viewpoint, then Above Average/1 would be a "1" and Below Average/3 would be a "9."

Methodology

The rankings are designed to reflect the interest of both equity and fixed-income investors across more than 30 individual metrics. The metrics are scored based on the covering analysts' subjective judgement and then aggregated to create a single score for each state, with certain categories, such as the state's history with respect to authorized equity returns, practice with respect to rate case test years and presence, or lack of alternative ratemaking provisions, weighted more heavily than others.

RRA State Regulatory Evaluations*

Above Average/1	Average/1	Below Average/1
Alabama	Arkansas	Alaska
	California	Kansas
	Colorado	Montana
	Indiana	New Mexico
	Nebraska	New Jersey
	Nevada	West Virginia
	North Dakota	
	Texas — RRC	
	Virginia	

Above Average/2	Average/2	Below Average/2
Florida	Delaware	Connecticut
Georgia	Hawaii	District of Columbia
Pennsylvania	Idaho	Maryland
	Kentucky	
	Louisiana — PSC	
	Massachusetts	
	Minnesota	
	New York	
	New Hampshire	
	Ohio	
	Oregon	
	Rhode Island	
	South Dakota	
	Utah	
	Wyoming	

Above Average/3	Average/3	Below Average/3
Iowa	Illinois	Arizona
Michigan	Louisiana — NOCC	
Mississippi	Maine	
North Carolina	Missouri	
Tennessee	Oklahoma	
Wisconsin	South Carolina	
	Texas — PUC	
	Vermont	
	Washington	

Data compiled Feb. 28, 2024.
NOCC = New Orleans City Council; PSC = Public Service Commission; PUC = Public Utility Commission; RRC = Railroad Commission.
* Within a given subcategory, states are listed in alphabetical order, not by relative ranking.
Source: Regulatory Research Associates, a group within S&P Global Commodity Insights.

Missouri Market Environment

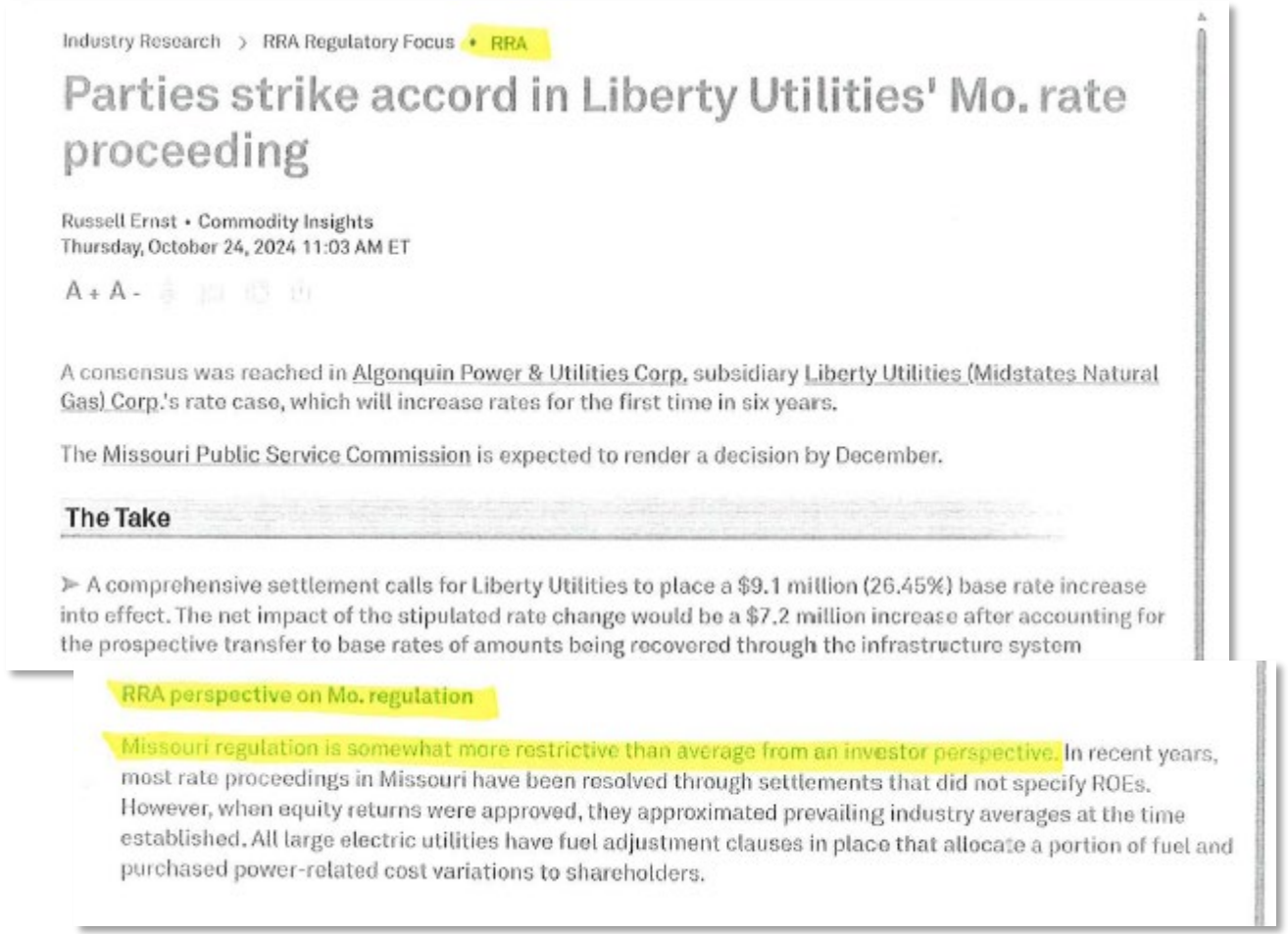
RRA state regulatory evaluations — Energy*

(By category, jurisdictions to watch highlighted)

Above Average/1	Above Average/2	Above Average/3	Average/1	Average/2	Average/3	Below Average/1	Below Average/2	Below Average/3
Alabama	Florida	Iowa	Arkansas	Delaware	Illinois	Alaska	Connecticut	Arizona
	Georgia	Michigan	California	Hawaii	Louisiana — NOCC	Kansas	Dist. of Columbia	
	Pennsylvania	Mississippi	Colorado	Idaho	Maine	Montana	Maryland	
		North Carolina	Indiana	Kentucky	Missouri	New Jersey		
		Tennessee	Nebraska	Louisiana — PSC	Oklahoma	New Mexico		
		Wisconsin	Nevada	Massachusetts	South Carolina	West Virginia		
			North Dakota	Minnesota	Texas — PUC			
			Texas — RRC	New Hampshire	Vermont			
			Virginia	New York	Washington			
				Ohio				
				Oregon				
				Rhode Island				
				South Dakota				
				Utah				
				Wyoming				

Data compiled Feb. 23, 2024.
NOCC = New Orleans City Council; PSC = Public Service Commission; PUC = Public Utility Commission; RRC = Railroad Commission.
* Within a given subcategory, states are listed in alphabetical order, not by relative ranking.
Source: Regulatory Research Associates, a group within S&P Global Commodity Insights.

Missouri Market Environment



Industry Research > RRA Regulatory Focus • RRA

Parties strike accord in Liberty Utilities' Mo. rate proceeding

Russell Ernst • Commodity Insights
Thursday, October 24, 2024 11:03 AM ET

A + A -

A consensus was reached in Algonquin Power & Utilities Corp. subsidiary Liberty Utilities (Midstates Natural Gas) Corp.'s rate case, which will increase rates for the first time in six years.

The Missouri Public Service Commission is expected to render a decision by December.

The Take

➢ A comprehensive settlement calls for Liberty Utilities to place a $9.1 million (26.45%) base rate increase into effect. The net impact of the stipulated rate change would be a $7.2 million increase after accounting for the prospective transfer to base rates of amounts being recovered through the infrastructure system

RRA perspective on Mo. regulation

Missouri regulation is somewhat more restrictive than average from an investor perspective. In recent years, most rate proceedings in Missouri have been resolved through settlements that did not specify ROEs. However, when equity returns were approved, they approximated prevailing industry averages at the time established. All large electric utilities have fuel adjustment clauses in place that allocate a portion of fuel and purchased power-related cost variations to shareholders.

Takeaways: (1) Policies have consequences

(2) Our current policies are not constructive

(3) Ratepayers are negatively impacted

Missouri *Can* Be a National Leader
3 Part Solution

Establish a State Reliability Mechanism

- Improve Data Collection and Understanding
- Increase Accountability
- Ensure Safe and Reliable Service

Integrated Resource Planning Reform

- Move from Static to Dynamic Approach
- Embrace Forward Looking Perspective
- Balance Incentives and Penalties – “Carrots & Sticks”

Accounting Treatment Reform

- Incent “Steel in the Ground”
- Deliver Safe and Reliable Service
- Ensure Consumer Protections

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Part 1: State Reliability Mechanism

Claire Eubanks – Engineer Manager, Engineering Analysis

Walt Cecil – Chief Economist

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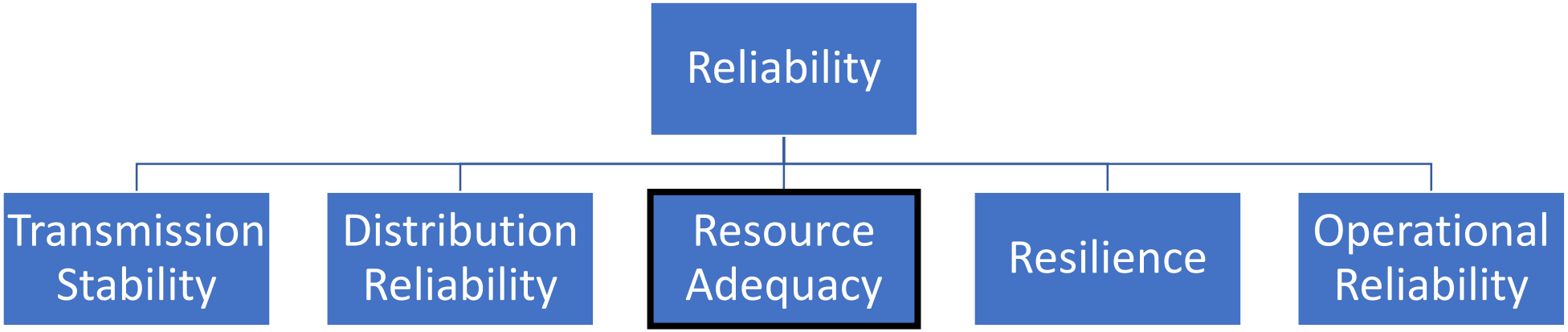
Missouri Public Service Commission's Mission

- We will ensure that Missourians receive safe and reliable utility services at just, reasonable and affordable rates.



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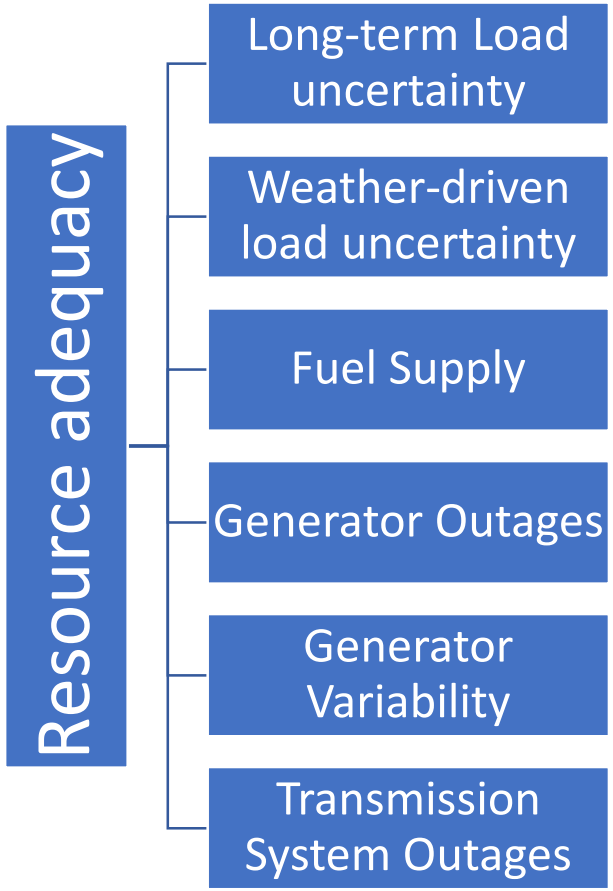
Resource Adequacy

- The ability of the electricity system to supply power and energy to meet consumer needs at all times, taking into account scheduled and unscheduled outages.
- Sets foundation for procurement and investment decisions.



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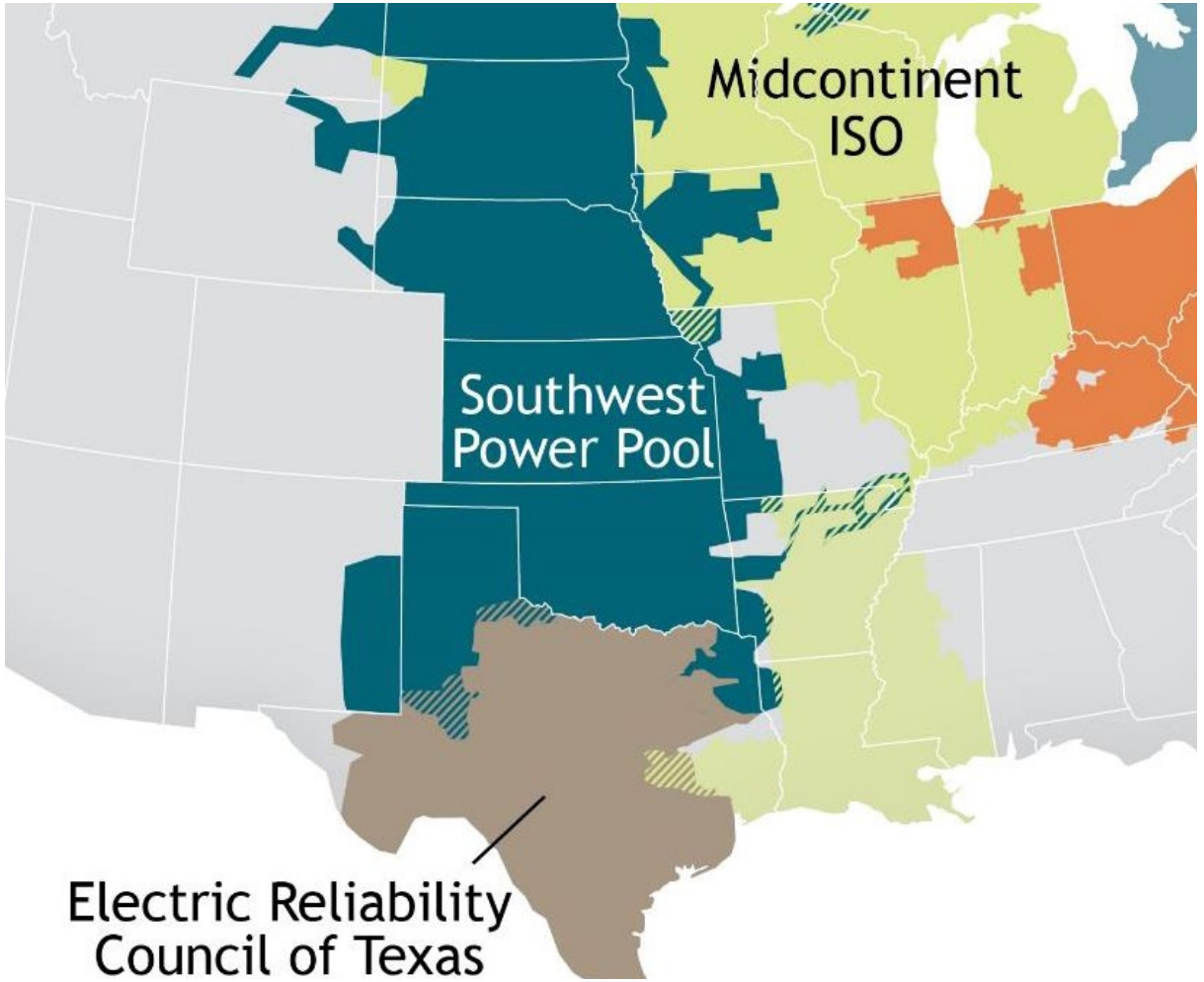
Regional Partners

- SPP and MISO are the grid operators for portions of Missouri
- Capacity demonstrations are required by SPP/MISO



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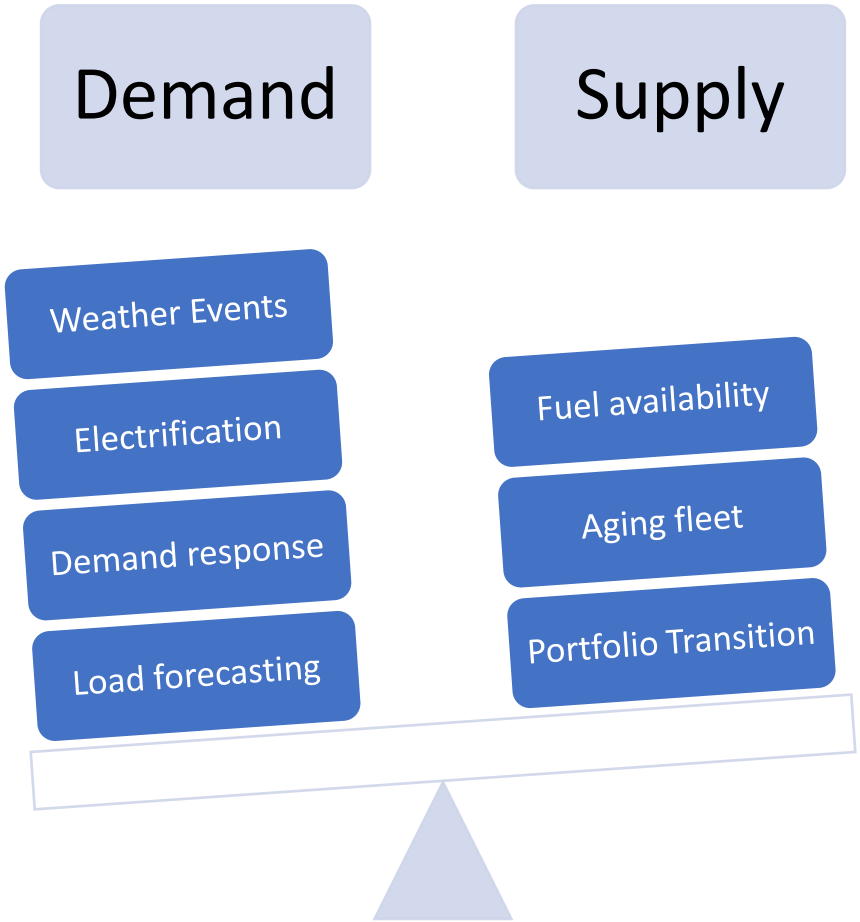
Growing Complexities for System Planners



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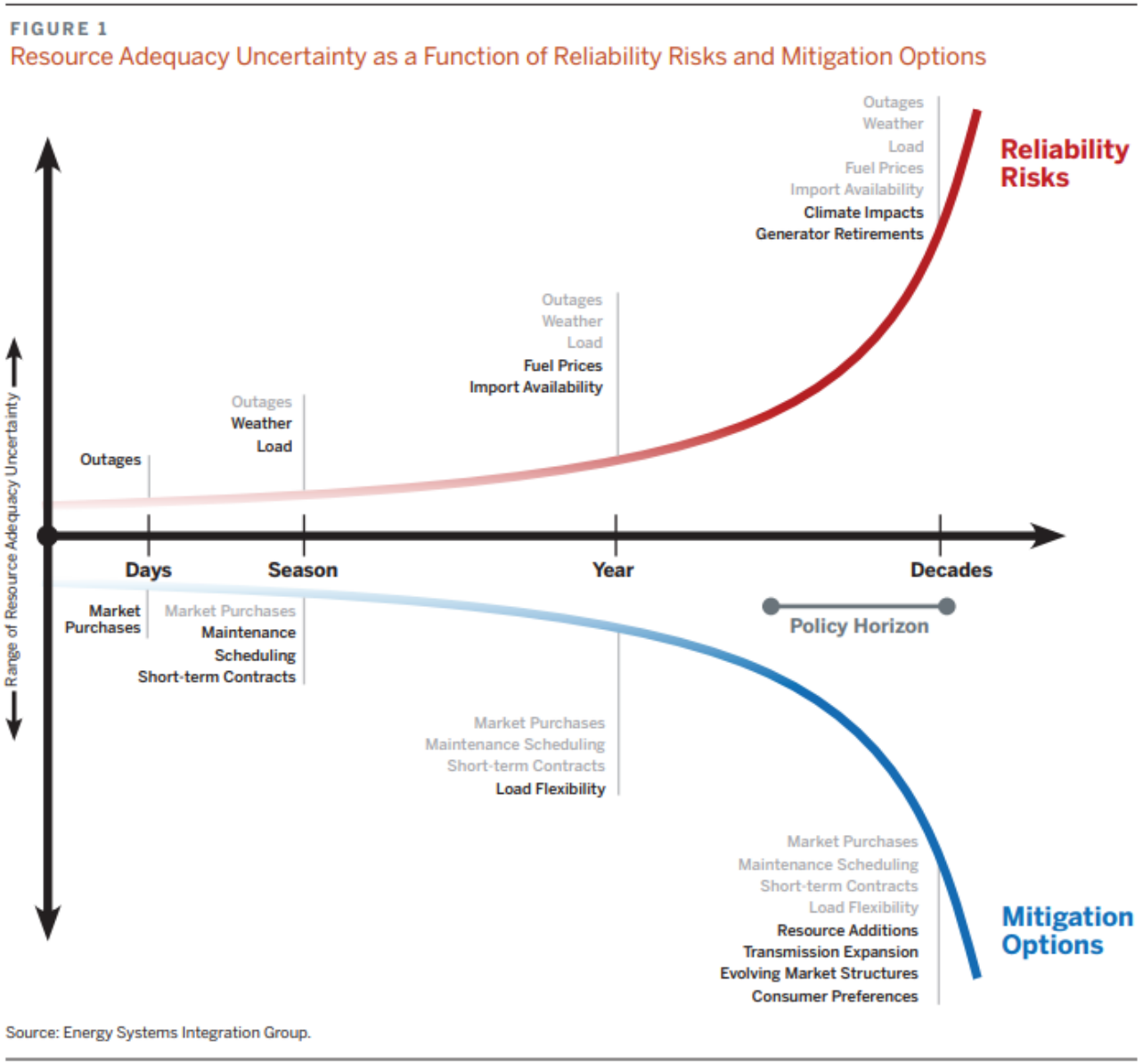
Time Horizons

- Resource adequacy needs span time horizons
  - Day-ahead planning
  - Seasonal decisions
  - Long-term planning



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SPP

OUR GENERATIONAL CHALLENGE

Working together to mitigate unprecedented power grid risks

BALANCE

- SPP must continuously balance electricity supply and demand across 14 states.
- Together we must balance grid **reliability, environmental policies, and affordable** electric service.
- This balancing act is increasingly challenged by growing risks of inadequate electricity supply to meet growing demand.

Excess generating capacity in SPP is shrinking to dangerously low levels.

As coal and gas generators are being retired, SPP increasingly depends on renewable energy, which is cleaner and lower cost but challenging due to its variability.

Emerging technologies can be helpful but need more investment and development to address today's challenges.

All generation types struggle to perform during extreme weather when demand is highest and human health and safety are at greatest risk.

We need significant amounts of new transmission and generation, which is costly and takes years to complete.

Our world is increasingly becoming electrified, and demand is rapidly rising across the U.S.

Demand in SPP could be 25% higher by 2030.

New sources of demand — data centers, crypto mining, oil and gas production, electric cars — consume tremendous energy.

Extreme weather events are more frequent and cause greater consumption during times of urgent need.

Winter and summer peak demands are growing at alarmingly high rates.

Our risks will increase exponentially if we don't take steps to address our generational challenge.

RELIABILITY IMPERATIVE

MARKET REDEFINITION + OPERATIONS OF THE FUTURE
TRANSMISSION EVOLUTION + SYSTEM ENHANCEMENTS

FEBRUARY 2024 UPDATE

Urgent and coordinated action needed to ensure continued grid reliability

Electric system reliability is vital for society. The U.S. power grid has long been one of the most reliable in the world. But due to a confluence of factors, including a looming mismatch between new generation resources coming online and older resources retiring, our "reliability risk profile" is changing in rapid and profound ways. As a result, our grid now faces a number of imminent and complex reliability challenges, including:

- **"Reliability attributes" are becoming scarce.** Weather-dependent resources such as wind and solar do not provide the same critical reliability attributes as conventional coal and natural gas resources that are retiring. Emerging technologies such as long-duration battery storage, small modular reactors, and hydrogen systems may someday offer solutions, but they are not yet viable at grid scale.
- **Extreme weather events** have become more frequent and severe, impacting both generation and transmission, and exacerbating other reliability risks.
- **Supply chain and permitting issues** that are beyond the control of electricity providers, states, and MISO are delaying many new generation projects that are otherwise fully approved.
- **Large single-site load additions** from a manufacturing resurgence and **incremental load growth** from electric vehicles and other electrification trends pose new challenges for the grid.
- **Investor preferences** for financing new energy projects are creating economic headwinds to build new dispatchable generation resources, even if they are critically needed for reliability purposes.
- **Fuel-assurance issues** with natural gas pipelines and other energy infrastructure can hamper consistent deliveries of fuel to reliability-critical generators.

Call to action: We must work together and move quickly

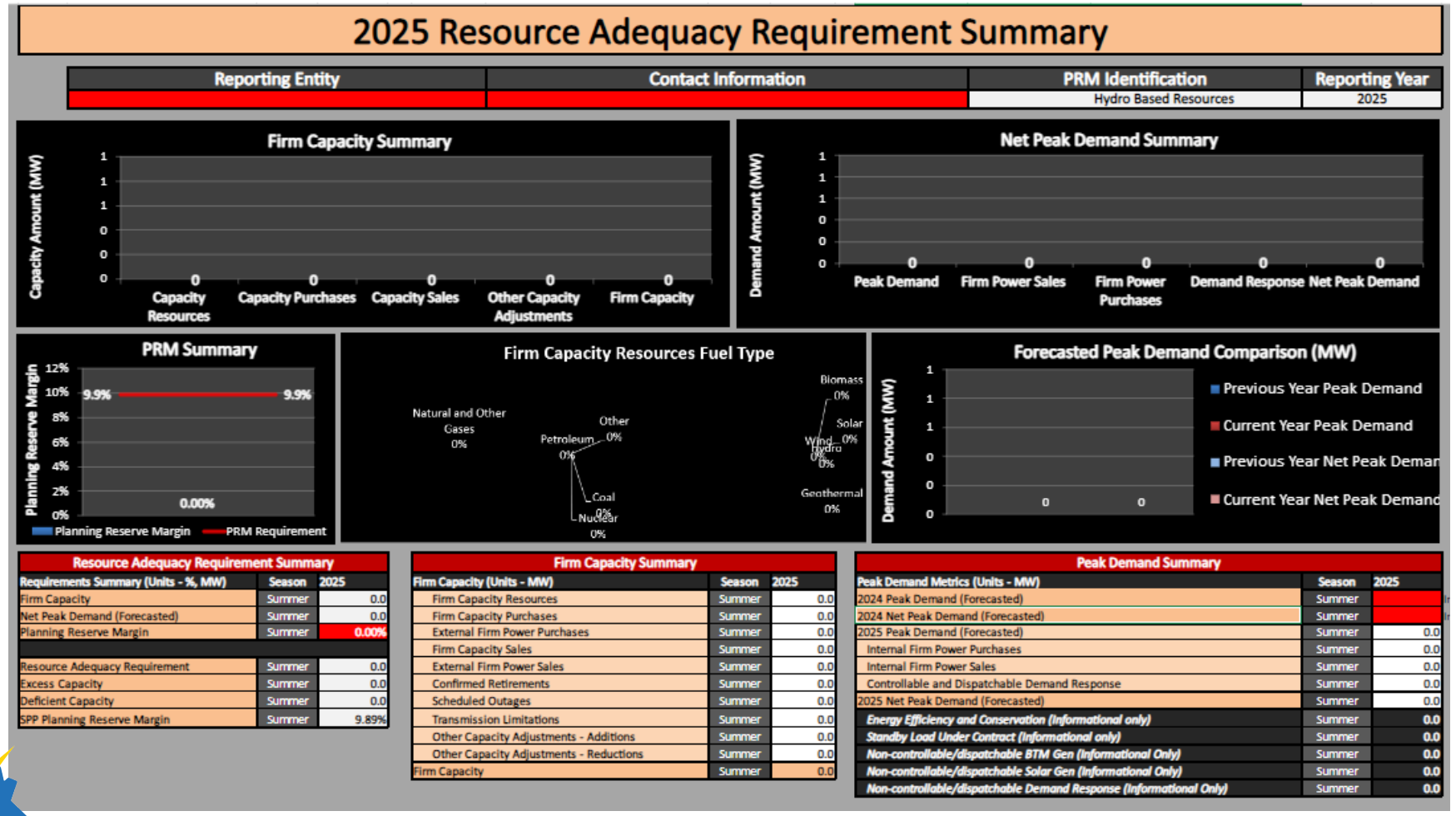
In the MISO region, the responsibility for grid reliability is shared among MISO-member electricity providers, states, and MISO. MISO calls this shared responsibility the "Reliability Imperative." In light of the urgent and complex reliability risks we face, MISO calls on its members and states to work together to:

- Refine generation resource plans across MISO by accelerating the addition of reliability attributes and moderating retirements to avoid undue reliability risk
- Maintain transition resources as reliability "insurance" until promising new technologies become viable at grid scale
- Identify areas of risk in which electricity providers, states, and MISO must coordinate

▶ Read the full report on misoenergy.org

MISO

SPP Resource Adequacy Example



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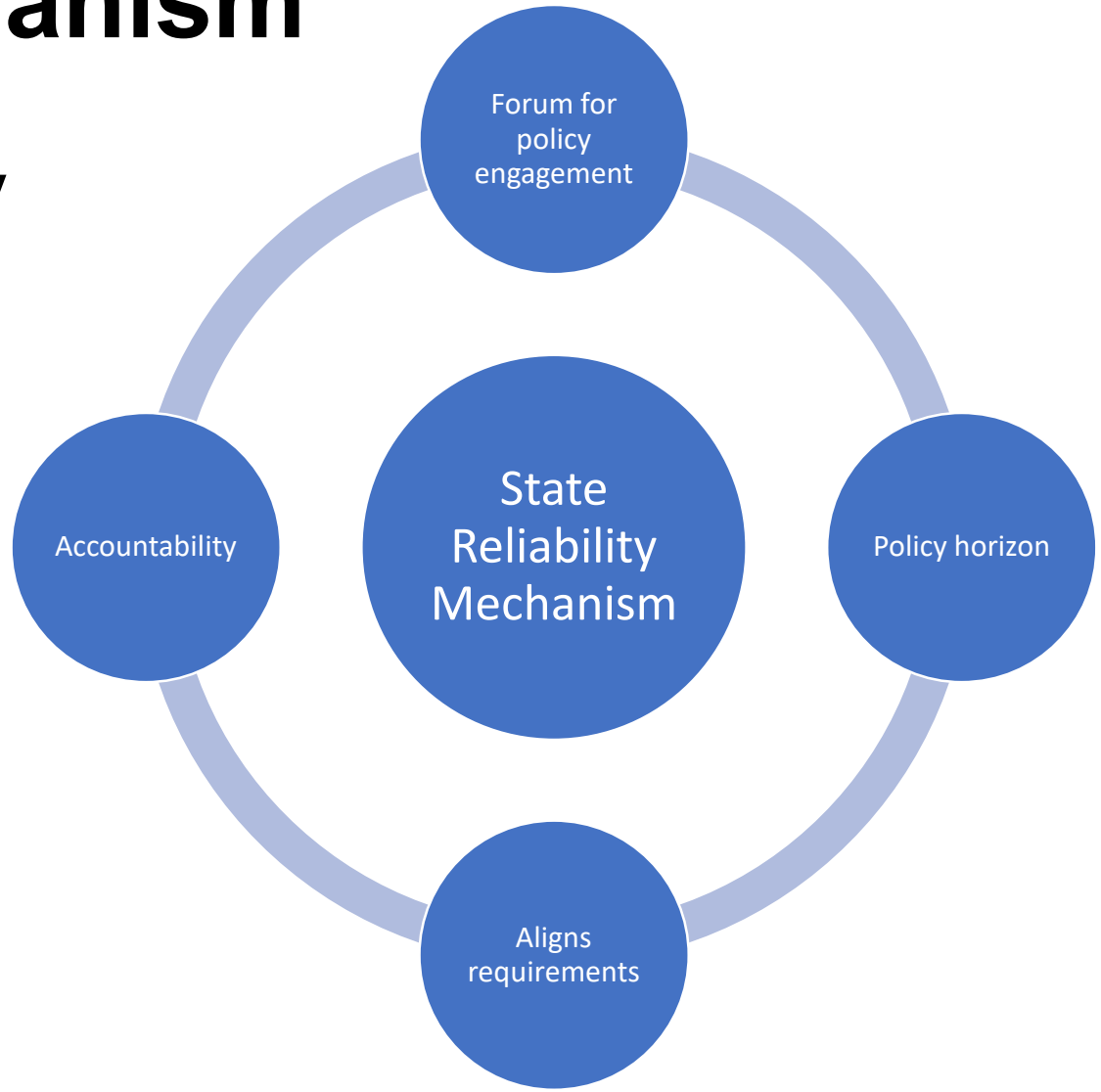
State Reliability Mechanism

- Requires documentation annually
- Covers the upcoming planning year and 3 subsequent years
- Consistent with the applicable SPP/MISO resource adequacy requirements
- Accountability. Commission may determine prudency or order plans to resolve issues



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Part 2: Integrated Resource Planning Reform

Doug Anderson – Advisor to Commissioner Mitchell

Jamie Myers – Advisor to Chair Hahn

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What is an Integrated Resource Plan (IRP)?

- A long-term plan, assembled by a utility, showing how it is going to meet future energy demand
  - The time horizon varies by state, but is usually somewhere between 10 to 20 years
  - Contains a mixture of plans/scenarios based off of variety of assumptions about the future
  - Addresses not just resource adequacy (both supply & demand side), but also resiliency & cost considerations as well
  - Includes information on generating portfolio makeup, planned new facilities, and retirement estimates
  - Variable soup: designed to find best (cost, reliability, stability) approach for the future

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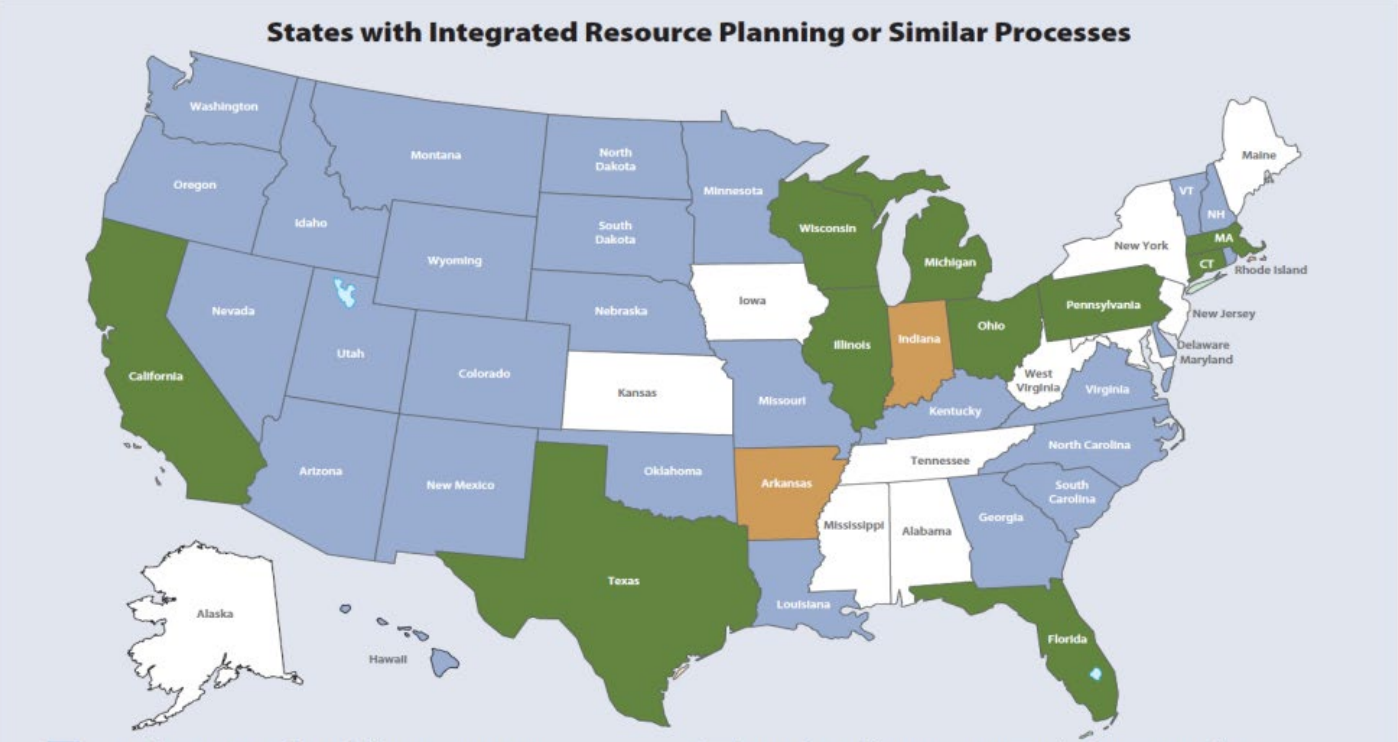
IRP and Long-Term Utility Planning

- Originally proliferated in the 1980s & early 90s to help address uncertainty in fuel prices & new generation resource types



Wilson, R. and B. Biewald, 2013, *Best Practices in Electric Utility Integrated Resource Planning, Synapse Economics, prepared for Regulatory Assistance Project.*

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Missouri's Current IRP Process

- Missouri's current IRP process was established in 1993
  - Last revised in 2011
  - Triennial filing with an annual update
- Limitations of the current IRP:
  - Created under a different paradigm to address different issues
  - Static process
  - Has no specific authorizing statute so limited in what it can accomplish
  - Limited stakeholder engagement/reserved for later in process
  - Required information is not as accessible as it could be
  - Non-binding

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Reforming Missouri's IRP Process

- New dynamic and pro-active approach to collaboratively address load demands and Resource Adequacy concerns.
- Initial Planning Stage
  - Every 4 years, the Commission will look into what needs to be included in an IRP filing
  - Proposed statute gives clear guidance as to what IRPs should focus on
    - Adequacy requirements
    - State & Federal regulations
    - Future projections
    - Technology evolution & costs
    - Minimum 16 year planning horizon

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IRP Reform – Stakeholder Involvement

- Each electric utility would go through a 1-year contested IRP case with the Commission on a staggered schedule
    - Features all parties that meet involvement requirements from the beginning
    - Commission can designate data standards & formatting to make modeling information transparent, open, and accessible to parties
  - Key Takeaways:
    - Contested Case
    - Stakeholder input and involvement throughout the process

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IRP Reform – Commission Order

- Commission will issue an order after the 1-year process
- The Commission will consider certain factors:
  - Resource Adequacy
  - Reliability
  - Rate Impacts
  - Cost-effectiveness
  - Resource Diversity

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IRP Reform - Incentives

- If a utility proposes new generation facilities and the Commission agrees with that approach, the Commission may designate the project as eligible for special treatment
  - Access to expedited Certificate of Convenience and Necessity (CCN) process
  - Ability to request construction work in progress (CWIP) accounting treatment in CCN process
    - <u>Customer protections:</u>
      - CWIP capped to estimated project cost & limited to expenditures made within estimated construction period
      - CWIP “claw back” if project is not built within estimated construction period
        - If the Commission determines in a separate proceeding that construction costs giving rise to the CWIP were imprudently incurred.

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IRP Reform - Penalties

- If Commission determines utility's plan is insufficient, it may flag the deficiency(ies) and order the utility to make modifications to its plan.
- Consequences for remaining deficiencies:
  - No access to special treatments
    - No expedited CCN
    - No CWIP
  - Commission may commence complaint process and seek penalties
  - May trigger enforcement of the State Reliability Mechanism

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IRP Reform – Rulemaking Authority

- Permits Commission to promulgate a Rule, consistent with the statutory provisions
- Further define and refine the process
  - Specific definitions
  - Annual updates

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IRP Reform – Consumer Protections

- Consumer groups and other stakeholders ability to participate in new IRP process
- Consideration of rate impacts and cost-effectiveness
- Incentives are limited and not guaranteed
- “Claw-back” provision

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Part 3: Accounting Treatment Reform

Mark Johnson – Chief Staff Counsel

Kim Bolin – Financial and Business Analysis Director

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Accounting Treatment and Construction

- The construction of generation facilities require obtaining significant upfront capital to pay for the expenses of construction.
- Traditionally, utilities are not able to recover the costs of the facility, or the costs of financing the construction of a facility, until it is in service and included in rates.
- The utility must incur all of the costs associated with the financing and construction, prior to any cost recovery through ratemaking.
- The timing between incurred expenses for construction and recovery of those costs is considered part of “regulatory lag”.
- Two common accounting treatments for the recovery of financing costs associated with construction are AFUDC and CWIP.

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What is AFUDC?

- **Accumulated Funds Used During Construction**
  - AFUDC is an accounting tool that allows the utility to book the financing costs for inclusion in the total cost of the project.
  - Includes the cost of borrowed funds or equity expended for construction purposes during the construction period.
- **How AFUDC works in regulation and ratemaking**
  - Once a facility is providing service to ratepayers, AFUDC recovered through rates.
  - This is the current accounting treatment used in Missouri.

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What is CWIP?

- **Construction Work In Progress**
  - CWIP is an accounting tool that allows utilities to recover some costs of new construction projects—like generating facilities—while the project is still under construction and not in service. Not yet “used and useful.”
- **How CWIP Works in Regulation and Ratemaking**
  - When allowed, utilities can include CWIP in their rate base, as part of a request to change base rates.
  - This means utilities begin earning a return on the investment in these projects before they are completed.

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Impact of CWIP on Utilities and Consumers

- **CWIP can potentially reduce financing costs for utilities.**
  - During the construction of a generating facility, a utility must continually raise capital in order to pay for the ongoing construction.
  - CWIP permits a utility to recover income to offset the costs to finance construction as the costs are being incurred, strengthening cash flow and reducing financial risk for the utility.
- **CWIP can reduce the overall cost of a project vs. current ratemaking treatment.**
- However, CWIP raises rates during construction, even though the utility project is not yet providing service.
- The inclusion of CWIP in rates, without a “claw back”, could cause ratepayers to pay for unfinished or canceled projects, without ever receiving the benefits.

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Current Status of CWIP in Missouri

- **The use of CWIP is currently prohibited for electric utilities in Missouri**
- **Passage of Section 393.135**
  - The Missouri Electric Utility Rate Act, also known as Proposition 1, was approved by voters on November 2, 1976.
  - The measure passed with 63.06% (1,132,664) for in favor, and 36.94% (663,486) against.
- **Prior to 1976, Missouri electric utilities were able to use CWIP to recover construction costs on large projects.**

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Current Status of CWIP in Missouri

- **What led to the passage of Section 393.135?**
  - Prior to 1975, the Commission's inclusion of CWIP in utility rates was limited.
  - Prominent cases authorizing the use of CWIP
    - **Union Electric (now Ameren Missouri)** – on December 22, 1975, in Case Nos. 18,314 and 18,527, the Commission authorized Union Electric (now Ameren Missouri) to include over $27 million of CWIP related to the Callaway Nuclear Plant in its Rate Base.
    - **Kansas City Power & Light (now Evergy Metro) –** on April 23, 1976, in Case Nos. 18,433, 18,463, 18,494, and 18,495, the Commission authorized Kansas City Power & Light (now Evergy Metro) to include over $55 million of CWIP related to the LaCygne No. 2 and Iatan Unit No. 1 plants in its Rate Base.
- **The Callaway project, and to a lesser extent the KCPL projects, highlighted the risks of CWIP for consumers.**
  - Construction delays and cost overruns relating to construction of nuclear facilities across the country led to fear that ratepayers could be left footing the bill for unfinished or canceled projects, without ever receiving the expected benefits.
- The Callaway, LaCygne, and Iatan facilities are currently in service today.

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CWIP Treatment in Other States

- **Prior to the 1970s, the general practice of utility commissions across the country was to prohibit the inclusion of CWIP in utility rates.**
- However, after financial struggles experienced by utilities across the county in the 1970s and early 1980s, many states reconsidered their treatment of CWIP.
- **Today, Missouri is one of a handful of states to have a statutory prohibition on the inclusion of CWIP in utility rates.**

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Targeted Allowance of CWIP

- **Two targeted changes to the treatment of CWIP are being proposed.**
  - Through an amendment to Section 393.135 specifically providing that electric utilities **shall** be permitted to include CWIP in rates for the construction of any **new natural gas generating unit**; and
  - As a “carve-out” to Section 393.135’s prohibition to the inclusion of CWIP in utility rates through the proposed IRP reform.
- Both of these changes are subject to identical limitations and customer protections

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Targeted Allowance of CWIP

- **Amendment to Section 393.135**
  - Applicable only to new natural gas generation
  - Guaranteed
  - The amount of CWIP must be determined in a proceeding for a Certificate of Convenience and Necessity (CCN)
  - Provision sunsets in 2035

- **IRP Reform "Carve-out"**
  - The utility must have an IRP approved by the Commission
  - Applicable to *any* new supply-side resource
  - Not Guaranteed
  - The amount of CWIP included in rates must be approved by the Commission in a subsequent *accelerated* CCN proceeding
  - Construction of the new resource must begin within the utility's initial four-year planning period.

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Consumer Protections

- **Eligibility for CWIP is subject to the following limitations:**
  - The inclusion of CWIP shall be in lieu of any otherwise applicable allowance for funds used during construction.
  - The Commission shall determine, in a CCN proceeding, the amount of CWIP that may ultimately be included in rate base, limited by:
    - The estimated cost of the project; and
    - Expenditures made within the estimated construction period for the project.

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Consumer Protections

- **CWIP "claw back"**
  - Any base rate recoveries arising from the inclusion of CWIP are subject to refund, together with interest on the refunded amount.
    - If the Commission determines in a separate proceeding that construction costs giving rise to the CWIP were imprudently incurred.

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CWIP vs. Current Ratemaking using AFUDC

- CWIP – Construction Work in Progress – Plant is included in rate base after a rate case. The utility earns a return on the amount spent before the plant is placed in service. Once plant is included in rate base the utility no longer recovers AFUDC on the amount in rate base.
- Current ratemaking using AFUDC – AFUDC accumulates when the construction begins and ends when the plant is placed in service. Plant and the AFUDC that is accumulated is included in rate base after the plant is placed in service. The utility earns a return on the plant and depreciation expense after a subsequent rate case.

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Assumptions used in Calculation

- Cost to Construction Gas Generating Plant = $1,000,000,000
- 5 years to build
- Yearly Construction Amount - $200,000,000
- Rate Case every 2 years
- Deprecation Rate = 2.118%
- Pre-Tax Return on Equity Rate = 6.82%
- AFUDC Rate = 5.36%

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Current Accounting Treatment – AFUDC

Year		Plant	Accum. Depreciation	Net Plant	Depreciation Exp.	Return	Total	Cumulative Total
1		$ 1,134,000,000	$ 24,020,028	$ 1,109,979,972	$ 24,020,028	$ 80,029,556	$ 104,049,584	$ 104,049,584
2		$ 1,134,000,000	$ 48,040,056	$ 1,085,959,944	$ 24,020,028	$ 78,297,712	$ 102,317,740	$ 206,367,324
3		$ 1,134,000,000	$ 72,060,084	$ 1,061,939,916	$ 24,020,028	$ 76,565,868	$ 100,585,896	$ 306,953,220
4		$ 1,134,000,000	$ 96,080,112	$ 1,037,919,888	$ 24,020,028	$ 74,834,024	$ 98,854,052	$ 405,807,272
5		$ 1,134,000,000	$ 120,100,140	$ 1,013,899,860	$ 24,020,028	$ 73,102,180	$ 97,122,208	$ 502,929,479
6		$ 1,134,000,000	$ 144,120,168	$ 989,879,832	$ 24,020,028	$ 71,370,336	$ 95,390,364	$ 598,319,843
7		$ 1,134,000,000	$ 168,140,196	$ 965,859,804	$ 24,020,028	$ 69,638,492	$ 93,658,520	$ 691,978,363
8		$ 1,134,000,000	$ 192,160,224	$ 941,839,776	$ 24,020,028	$ 67,906,648	$ 91,926,676	$ 783,905,039
9		$ 1,134,000,000	$ 216,180,251	$ 917,819,749	$ 24,020,028	$ 66,174,804	$ 90,194,832	$ 874,099,871
10		$ 1,134,000,000	$ 240,200,279	$ 893,799,721	$ 24,020,028	$ 64,442,960	$ 88,462,988	$ 962,562,859
40		$ 1,134,000,000	$ 960,801,118	$ 173,198,882	$ 24,020,028	$ 12,487,639	$ 36,507,667	$ 2,811,145,026
41		$ 1,134,000,000	$ 984,821,146	$ 149,178,854	$ 24,020,028	$ 10,755,795	$ 34,775,823	$ 2,845,920,849
42		$ 1,134,000,000	$ 1,008,841,173	$ 125,158,827	$ 24,020,028	$ 9,023,951	$ 33,043,979	$ 2,878,964,828
43		$ 1,134,000,000	$ 1,032,861,201	$ 101,138,799	$ 24,020,028	$ 7,292,107	$ 31,312,135	$ 2,910,276,964
44		$ 1,134,000,000	$ 1,056,881,229	$ 77,118,771	$ 24,020,028	$ 5,560,263	$ 29,580,291	$ 2,939,857,255
45		$ 1,134,000,000	$ 1,080,901,257	$ 53,098,743	$ 24,020,028	$ 3,828,419	$ 27,848,447	$ 2,967,705,702
46		$ 1,134,000,000	$ 1,104,921,285	$ 29,078,715	$ 24,020,028	$ 2,096,575	$ 26,116,603	$ 2,993,822,306
47		$ 1,134,000,000	$ 1,128,941,313	$ 5,058,687	$ 24,020,028	$ 364,731	$ 24,384,759	$ 3,018,207,065
		TOTAL						$ 3,018,207,065

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Accounting Treatment with CWIP Allowance

Year		Plant	Accum. Depreciation	Net Plant	Depreciation Exp.	Return	Total	Cumulative Total
1		$ -						
2		$ 416,080,000				$ 28,376,656	$ 28,376,656	$ 28,376,656
3		$ 416,080,000				$ 28,376,656	$ 28,376,656	$ 56,753,312
4		$ 832,160,000				$ 56,753,312	$ 56,753,312	$ 113,506,624
5		$ 832,160,000				$ 56,753,312	$ 56,753,312	$ 170,259,936
6		$ 1,037,520,000	$ 21,976,419	$ 1,015,543,581	$ 21,976,419	$ 73,220,692	$ 95,197,111	$ 265,457,047
7		$ 1,037,520,000	$ 43,952,838	$ 993,567,162	$ 21,976,419	$ 71,636,192	$ 93,612,612	$ 359,069,659
8		$ 1,037,520,000	$ 65,929,258	$ 971,590,742	$ 21,976,419	$ 70,051,693	$ 92,028,112	$ 451,097,771
9		$ 1,037,520,000	$ 87,905,677	$ 949,614,323	$ 21,976,419	$ 68,467,193	$ 90,443,612	$ 541,541,383
10		$ 1,037,520,000	$ 109,882,096	$ 927,637,904	$ 21,976,419	$ 66,882,693	$ 88,859,112	$ 630,400,495
45		$ 1,037,520,000	$ 879,056,769	$ 158,463,231	$ 21,976,419	$ 11,425,199	$ 33,401,618	$ 2,742,234,528
46		$ 1,037,520,000	$ 901,033,188	$ 136,486,812	$ 21,976,419	$ 9,840,699	$ 31,817,118	$ 2,774,051,646
47		$ 1,037,520,000	$ 923,009,607	$ 114,510,393	$ 21,976,419	$ 8,256,199	$ 30,232,619	$ 2,804,284,265
48		$ 1,037,520,000	$ 944,986,026	$ 92,533,974	$ 21,976,419	$ 6,671,700	$ 28,648,119	$ 2,832,932,383
49		$ 1,037,520,000	$ 966,962,445	$ 70,557,555	$ 21,976,419	$ 5,087,200	$ 27,063,619	$ 2,859,996,002
50		$ 1,037,520,000	$ 988,938,865	$ 48,581,135	$ 21,976,419	$ 3,502,700	$ 25,479,119	$ 2,885,475,121
51		$ 1,037,520,000	$ 1,010,915,284	$ 26,604,716	$ 21,976,419	$ 1,918,200	$ 23,894,619	$ 2,909,369,741
52		$ 1,037,520,000	$ 1,032,891,703	$ 4,628,297	$ 21,976,419	$ 333,700	$ 22,310,119	$ 2,931,679,860
		TOTAL						$ 2,931,679,860

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Cost Savings: CWIP vs. Current Ratemaking

- In this instance CWIP is the cheaper option for customers
- CWIP
  - Total Costs = $2,931,679,860
- Current Ratemaking (AFUDC)
  - Total Costs = $3,018,207,065
- Savings Difference
  - Total Savings: $86,527,205

- CWIP may not be the cheaper option in all instances depending upon the cost of the plant, time to construct the plant, cost of debt and equity.

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