

Great Falls Development Alliance Data Center Task Force
Fifth Meeting
8/26/2026
Approx. 40 attendees

Presenter: Bob Morris

Bob Morris is a Butte, MT native and a Montana Tech engineering alumnus. Mr. Morris has worked in electric power for the past 40 years, focusing on protection and control of electric power systems around the world, including the high voltage power grid, large industrial power plants, and data centers. Mr. Morris currently serves as the Lance Energy Chair at Montana Tech and is a member of Governor Gianforte's Energy Task Force.

Bob has presented on the data center topic 30- 40 times, the goal is to educate. Important to remember the topic is evolving real time, and information is moving very quickly.

Defining a data center, 3 main types:

- 1- Hyperscalers – require back up power, typically have less employees
- 2-Co location – considered the employment sweet spot, multiple companies in one location
- 3- Crypto currency – typically lower budget, cheaper build outs, no back up power

Co location example: Sabey Corporation builds a 250 MW center and might rent out to 10 companies, increasing the number of employees on site versus hyperscalers.

Major concerns with data centers:

Electric Power
Water
Wastewater
Noise
Vibration
Light

Article from Liat Ben Zur, Fox news 8/26/26: America needs AI to Survive. Working Families need to survive it too.

GFDA Data Center Task Force Meeting August 26, 2026
Fifth Meeting

<https://www.foxnews.com/opinion/america-needs-ai-survive-working-families-also-need-survive-it>

Key points from article: The US is losing the public in this evolution of discussion, but the stakes are high: China treats AI as a geopolitical imperative.

US must lead in AI, it is matter of national security. AI will shape military strength, scientific progress, and economic power for the next 50 years. Falling behind China is not an option America can afford.

Winning has a cost. AI has trillion dollar valuations with a fraction of the workforce of past industrial giants.

The question that belongs on every AI board agenda today/what host communities deserve:

- 1-Upgraded grids
- 2-AI Institutes
- 3- Apprenticeships
- 4-Local venture funds

Grid United is a private company building the North Plains connector. Grid United invested in the Montana Community fund – investing in all communities that the North Plains connector is going through.

Foreign influence is amplifying data center opposition – refer to Open AI report. American Energy Institute also reports on foreign funding to oppose US Data Center expansion. Some estimations are as much as \$39MM in foreign funding for US based anti data center campaigns.

Quantica is a power company formed out of PPL and Talen – goal was to build an energy park, then get a data center to use the load of the power they generate. Quantica is an example of a company that needs to get ahead on community engagement.

Good question - is AI a bubble or a trend? Where will we get the energy?

Check out Mark P. Mills at the National Center for Energy Analytics.

Expect 75-100 GW growth by 2030 (6-8% growth). Generation will come from natural gas

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now, nuclear and solar later.

Proposed MT data centers:

1-Atlas, has been operating for 8 years

2-Quantica (still looking for data center company to take energy) - proposed

3-Sabey - proposed

Data Center Anatomy

Electric Power

IT Equipment Servers & Telecommunications

Cooling

Technology is moving rapidly and things are getting increasingly efficient.

Evaporative cooling is cheap to run but uses a lot of water.

Air cooled chiller uses more power but less water.

Water use: what's the design of the system?

Oklahoma State example - closed loop chilled no external water use.

Sabey data centers in Round Rock Texas: Pays taxes of 600 homes but uses the water of 15 homes.

Direct data center water use doesn't account for water used to produce the energy in a coal fired plant or other generation source. Would have to look at the entire life cycle of water inputs to include the water resources used for energy produced.

Are data centers driving higher electric rates?

General idea is that if you move more megawatt hours, the cost per megawatt goes down.

North Dakota has the cheapest electricity in the US. Most expensive electricity is Hawaii and California.

Electricity rates follow policies more than data centers.

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Supply options for energy in Montana:

- 1-NorthWestern Energy (statute 69-8-201). This generation goes into the rate base
- 2-Market “Choice” – bilateral agreement with independent power producers
- 3-Bring your own generation in front of or behind meter

Bring your own generation is the Broadview Data Center energy concept (Quantica) – export it out on WECC transmission lines, under FERC jurisdiction, not in the MT rate base

Before Broadview was a data center project, it was funded by inflation reduction act incentives for wind and solar development as an energy park. Now need an off taker for the generation.

Crypto centers can tend to cut corners and have more nuisance environmental impacts.

PA and TX putting moratorium on Data centers – TX said investigation not necessarily moratorium.

Colstrip shuts down in 2042. Colstrip provides baseload for Montana. NorthWestern has a 2050 carbon free mandate – potentially investigating nuclear at Colstrip.

Geothermal costs about \$200/MW, looking at assessment wells in Deer Lodge Valley in Montana. Geothermal is definitely possible but commercially at scale unproven.

Batteries are very expensive, and also important to look at capacity factors of different generation sources. Example, 100 MW of wind might only be accredited at 0.2, so only 20 MW can go into a utility generation plan.

Q&A

Jack McBroom built the wind farms in Kevin, MT

Talking about the Berkshire Hathaway Energy line that comes through town. There is power on that line that can be used for industrial complexes.

Q: What about the merger with Black Hills Energy?

A: Good question. Black Hills has more natural gas, could help replace Colstrip coal fired

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generation.

NorthWestern doesn't get the best financing rates, the merger may allow attraction of lower cost of capital.

Q: How to engage with the data center issues on social media?

A: Good question. Basically, you can't, it's so polarized. Need to talk about these issues face to face.

Q: If universities aren't pumping out IT professionals, then you are importing jobs. Does Montana have the expertise to employ people within state? Or are we importing jobs?

A: Good question. Have companies like Sabey and Quantica float scholarships and float internship engagements for jobs in MT. Look at the Quincy, WA success story – see that the arrangements can be set up prior to the data centers development. Ensure there is a project labor agreement tied to the project itself, and tie it into the education system.

Comment: Communities need to attract and work with the right company. An example is Sabey, they are a values based, family owned company. Their goal is to benefit the lives of 1 billion people through their technology and expertise.

Q: I could hear from your tone of voice the idea of a moratorium is not a pleasing idea. Need regulations in place that protect the people of Montana. The jobs business is exciting, we want to encourage jobs except at the expense of the environment. The cost to the environment was not mentioned at all. The positive benefits listed were only monetary. Water is gold, and snow on the mountains will become less. We have to be careful, be in favor of a moratorium. We need time before companies come to have the legislation and zoning and guardrails in place.

A: Thank you. There is certainly not one size fits all for every community and it is important to think through all the variables.

Q: Quincy, WA is an Ag based economy. Are there any other similar communities that embrace modernization while protecting things that are central to their character – any other community to recommend Great Falls looks at?

A: Good question. Look at North Dakota – lots of data center activity.

Follow up information from Bob Morris on this question via email on 8/28/26:

Montana-Dakota Utilities (MDU) is now serving several large AI data center projects, all developed by Applied Digital:

- Polaris Forge 1 – Ellendale, ND, on the ND/SD border. This one just came online. It's currently running at 175 MW with room to grow to 400 MW. They located it in Ellendale largely because of the huge amount of wind generation in the area — so much that electricity prices there often drop to zero. MDU customers have actually seen rebates as a result of this project.
- Polaris Forge 3 – near Center, ND. A 430 MW facility under an agreement with MDU, expected to start operations in August 2027.
- A hyperscale facility near Williston, ND that expanded capacity by over 100 MW in 2023, though it strained the local transmission system enough that MDU reported duplicate grid-operator charges.

There is also a Polaris Forge 2 site planned near Harwood, ND (north of Fargo), but that one is powered by Cass County Electric Cooperative, not MDU.

Ellendale in particular might be the most useful comparison for Great Falls.

Bob Morris' presentation slides are attached to these notes.

End of notes.



Montana Data Centers

Economic Benefits and Resource Demands

Great Falls Data Center Task Force
August 26, 2026



Bob Morris
Lance Energy Chair

rmorris4@mtech.edu

A **data center** is a secure facility that houses computer servers and networking equipment to **store, process, and transmit digital information**

Applications

- Internet access and website hosting
- Cloud storage and computing
- Financial transactions
- Healthcare records
- Emergency communications
- Government and public services
- Entertainment
- Travel (air, hotel, car rentals, etc.)
- Maps (GIS)
- Cryptocurrency mining
- Military
- Artificial Intelligence

Purpose & Scale

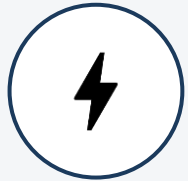
Hyperscale

Colocation

Cryptocurrency

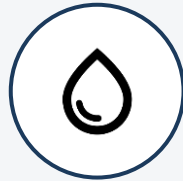
Data Center Infrastructure & Community Impacts

Key resource and community considerations for siting and permitting



Electric Power

Large, continuous electricity demand



Water

Significant withdrawals for cooling



Wastewater

Discharge volume and treatment capacity



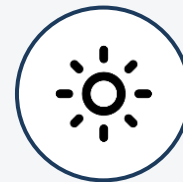
Noise

Continuous mechanical and cooling noise



Vibration

Generators and rooftop equipment



Light

Nighttime lighting and light pollution

America Needs AI to Survive. Working Families Need to Survive It Too.

A growing gap between AI infrastructure investment and local benefit threatens the public trust the AI buildout depends on.

The Disconnect

Every few weeks, another multibillion-dollar data center is announced. A tech giant celebrates a milestone — a small town wonders what it just signed away.

Local communities supply the land, power, water, and political goodwill — often for a handful of permanent jobs in return.

1

Grid demand keeps climbing

2

Water use keeps climbing

3

Land footprint keeps climbing

Why the Stakes Are So High

The US must lead

China treats AI as a geopolitical imperative.

AI will shape military strength, scientific progress, and economic power for the next 50 years.

Falling behind is not an option America can afford.

But winning has a cost

AI is scaling to trillion-dollar valuations with a fraction of the workforce of past industrial giants.

Middle-class jobs in the crosshairs:

- Software developers
- Designers
- Accountants
- Corporate marketers
- Legal analysts

“

How long will the public support this pace of change if they believe they bear the infrastructure costs while a handful of zip codes collect the rewards?

The question that belongs on every AI board agenda today.

What Host Communities Deserve

1 Upgraded grids

Permanent improvements to municipal electric infrastructure

2 AI Institutes

Dedicated programs at local community colleges

3 Apprenticeships

Standardized pathways into high-paying technical careers

4 Sovereign compute

Reserved capacity for regional universities and startups

5 Local venture funds

Tech-backed capital for residents to build new businesses

The Bottom Line

This isn't philanthropy — it's an investment in the social license to operate. Lose public trust, and projects stall, regulations multiply, and expansion grinds to a halt.

America will build astonishing AI systems. The real question is whether we build a country that still believes those systems are working in its favor.

Foreign Influence Amplifies Data Center Opposition

OpenAI

PRC-linked influence operations are targeting AI debates in the US



June 2026 Threat Report

Data Center Bandwagon Campaign





April 2026

FOREIGN-FUNDED OPPOSITION TO U.S. DATA CENTER EXPANSION

\$39M+
in foreign
funding

200+ signed
moratorium letter

4 foreign donor
countries

Organization	Oak (UK)	Hohn (UK)	Wyss (CH)	Quadrature (UK)	KR Fdn (DK)	Total
350.org						\$9,541,083
Americans for F Reform						\$4,382,000
Extinction Rebe						\$200,000
Friends of the E						\$467,607
GAIA						\$6,375,000
Greenpeace US						\$50,000
John Muir Proje						\$2,200,000
NY Communitie						\$550,000
Oil Change Inte						\$5,899,293
Physicians for S						\$141,056
Sierra Club						\$2,107,400
Indivisible Proje						\$7,455,000
TOTAL FOREIGN FUNDING						\$39,368,439

US Government Investigates Foreign Influence



'Follow the money': Goldman Sachs under fire over \$285M money trail in Neville Roy Singham probe



Chairman Smith Exposes U.S. Nonprofit as Likely CCP-Funded Propaganda Arm Operating Under Tax-Exempt Status



Chairmen Guthrie, Joyce, and Latta Request Investigation of Foreign Adversaries' Efforts to Block American Data Center Buildout

Is AI a Bubble or Trend? What About the Energy?

The Rise of AI:

A Reality Check on Energy and Economic Impacts



Mark P. Mills

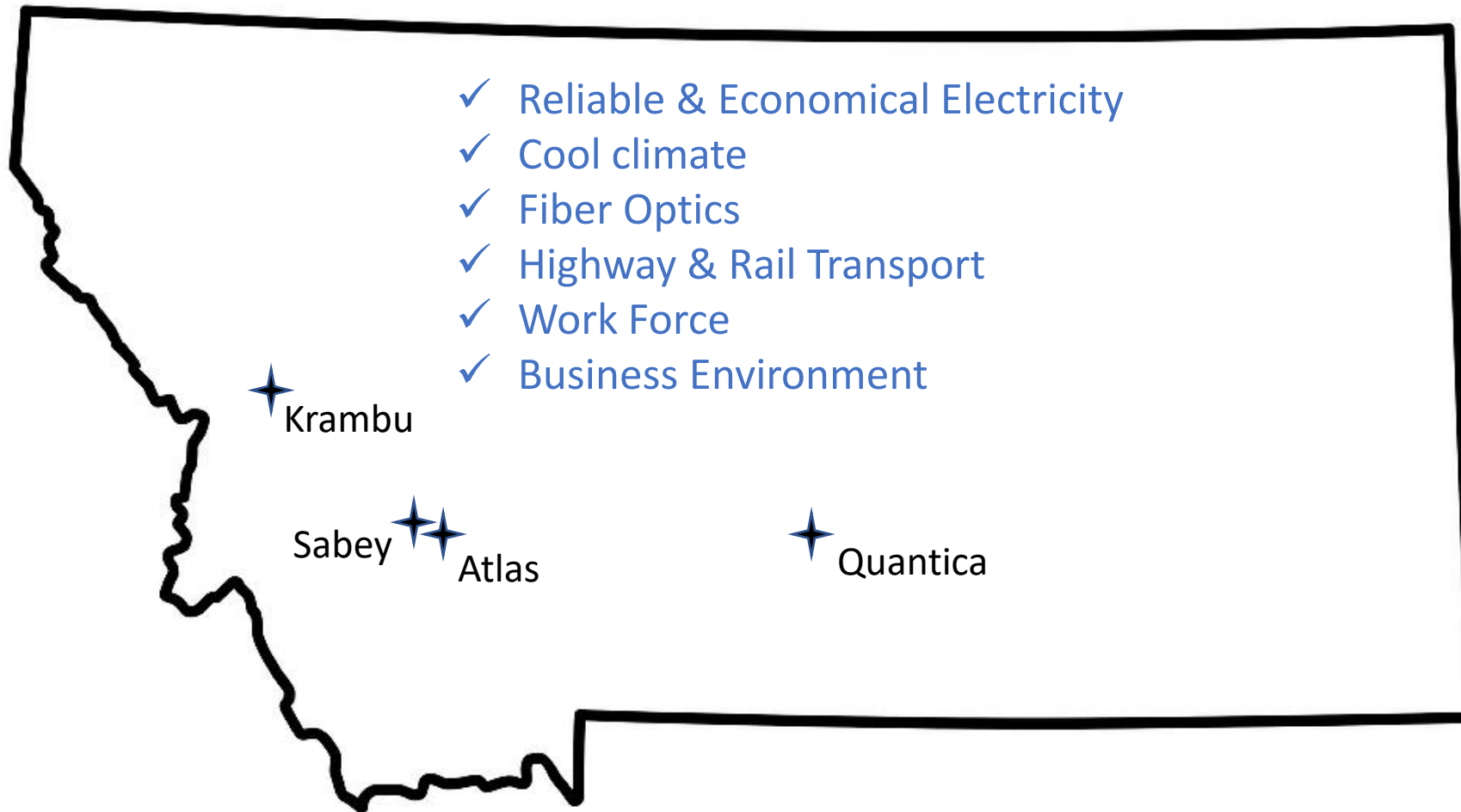
Executive Director, National Center for Energy Analytics

- Annual spend \$1T (3% of GDP)
- Productivity (GDP) boost: 1.2% -> 2.2%
- National security – aka Manhattan Project
- 75 – 100 GW electricity growth by 2030 (6-8%)
- Natural gas now, nuclear & solar later

Proposed Montana Data Centers

Supplier	Location	Initial Load (MW)	Final Load (MW)
Atlas	Butte	65 ¹	150
Quantica	Broadview	500	1,000
Sabey	Butte	50	250
Total		615	1,400

Why Data Centers in Montana?



SW Montana Data Center Economic Impact

Potential Transformational Economic Change

Construction Impact

Year	Direct Jobs	Derivative Jobs	Total Jobs	Direct Wages	Derivative Wages	Annual Income	Population
1-3	900	2,400	3,300	\$70K	\$57K	\$195M	

Operational Impact

4+	175	700	875	\$89K	\$57K	\$56M	1,833
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Annual Property Tax Addition: \$5M - \$8M

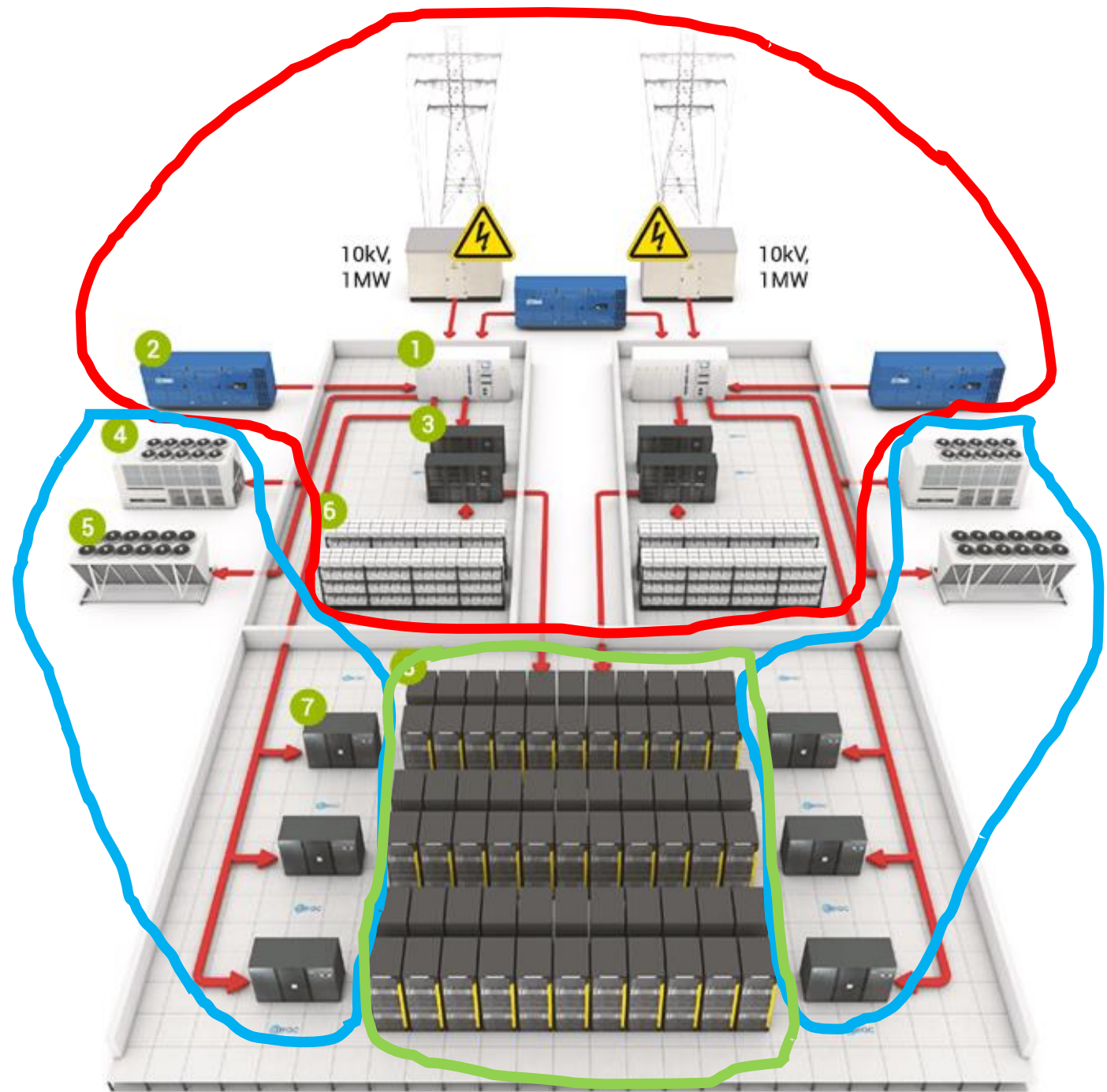
Data Center Anatomy

Electric Power

IT Equipment

Servers & Telecommunications

Cooling

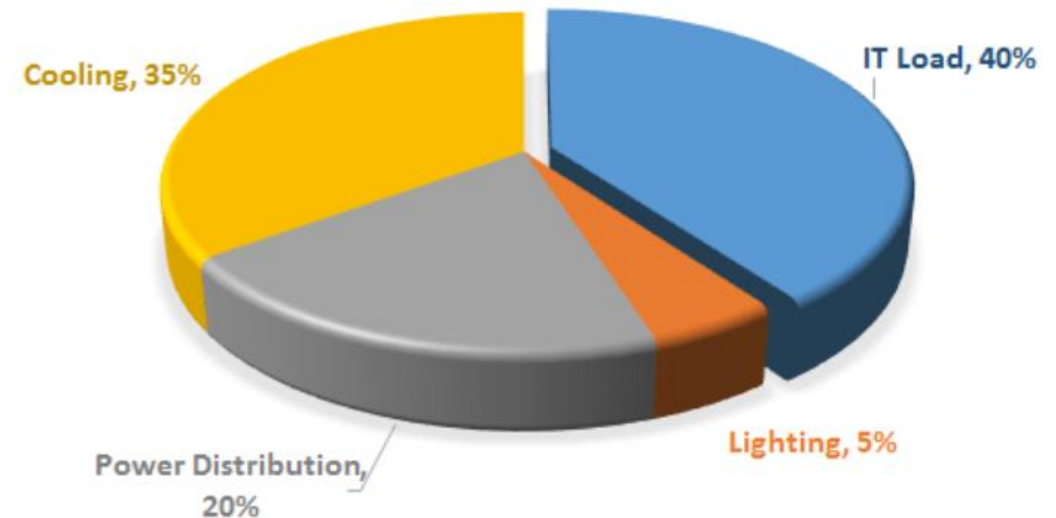


How Efficient is Data Center Power Use?

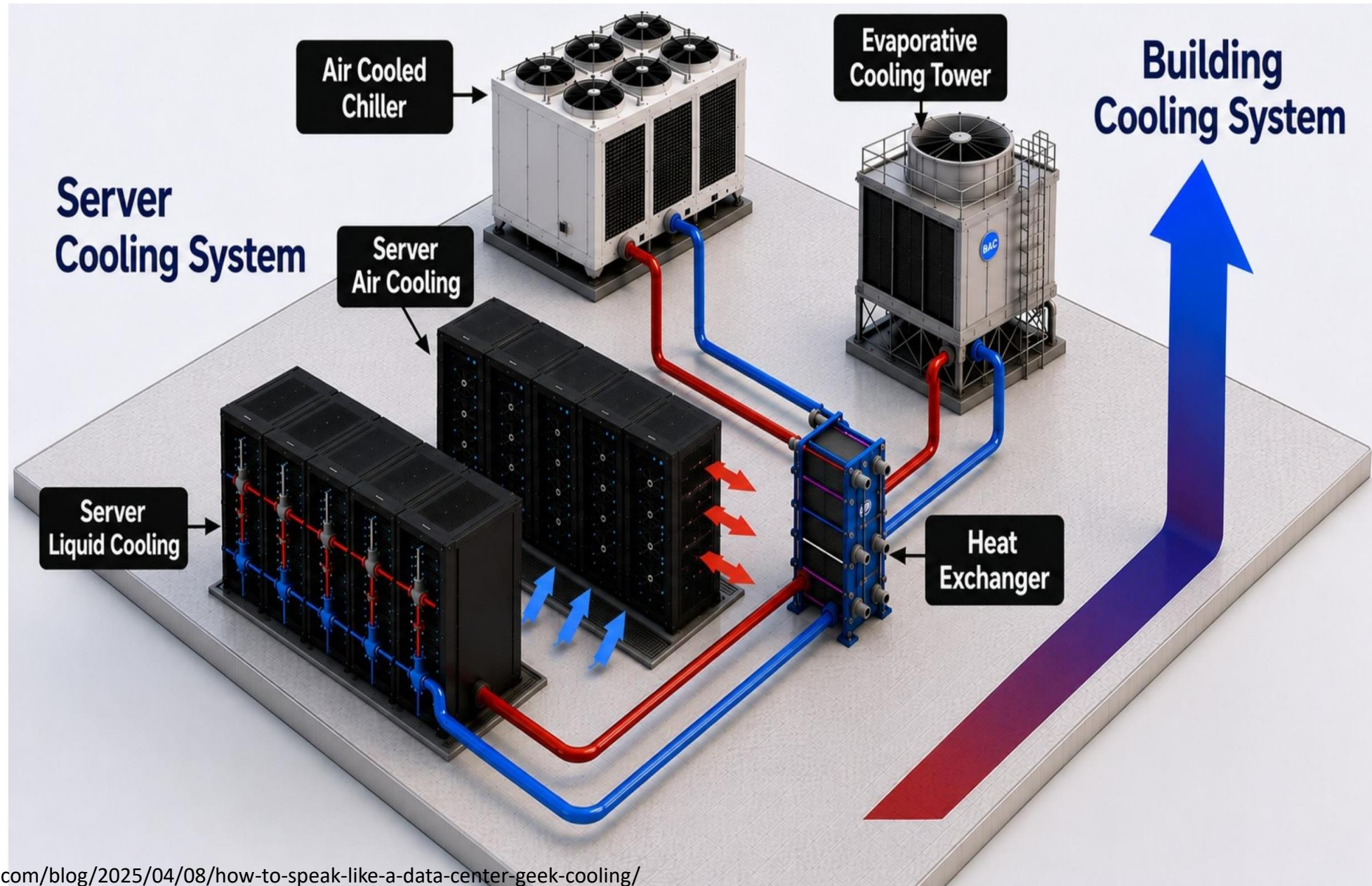
Power Use Effectiveness $PUE = \frac{\text{Total Facility Power (MW)}}{\text{IT Equipment Power (MW)}}$

Average $PUE = 1.6$

Best in Class $PUE = 1.1$



Data Centers Optimize Cooling System Design



Select Cooling System to Optimize Water & Energy Use



DRY COOLERS



ADIABATIC COOLERS



HYBRID COOLERS



EVAPORATIVE COOLERS

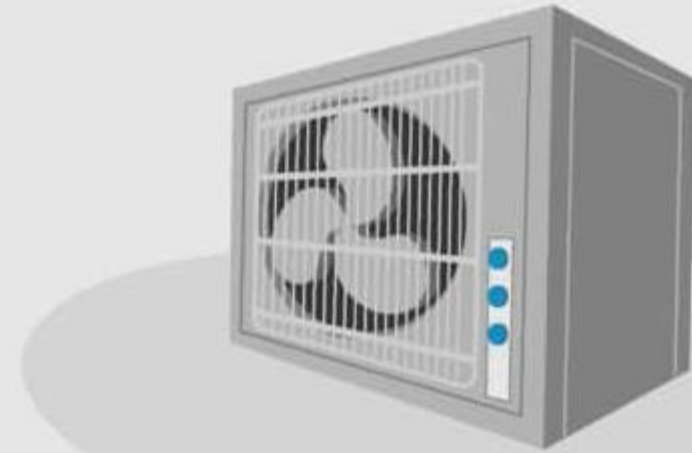


Building Cooling System Tradeoffs



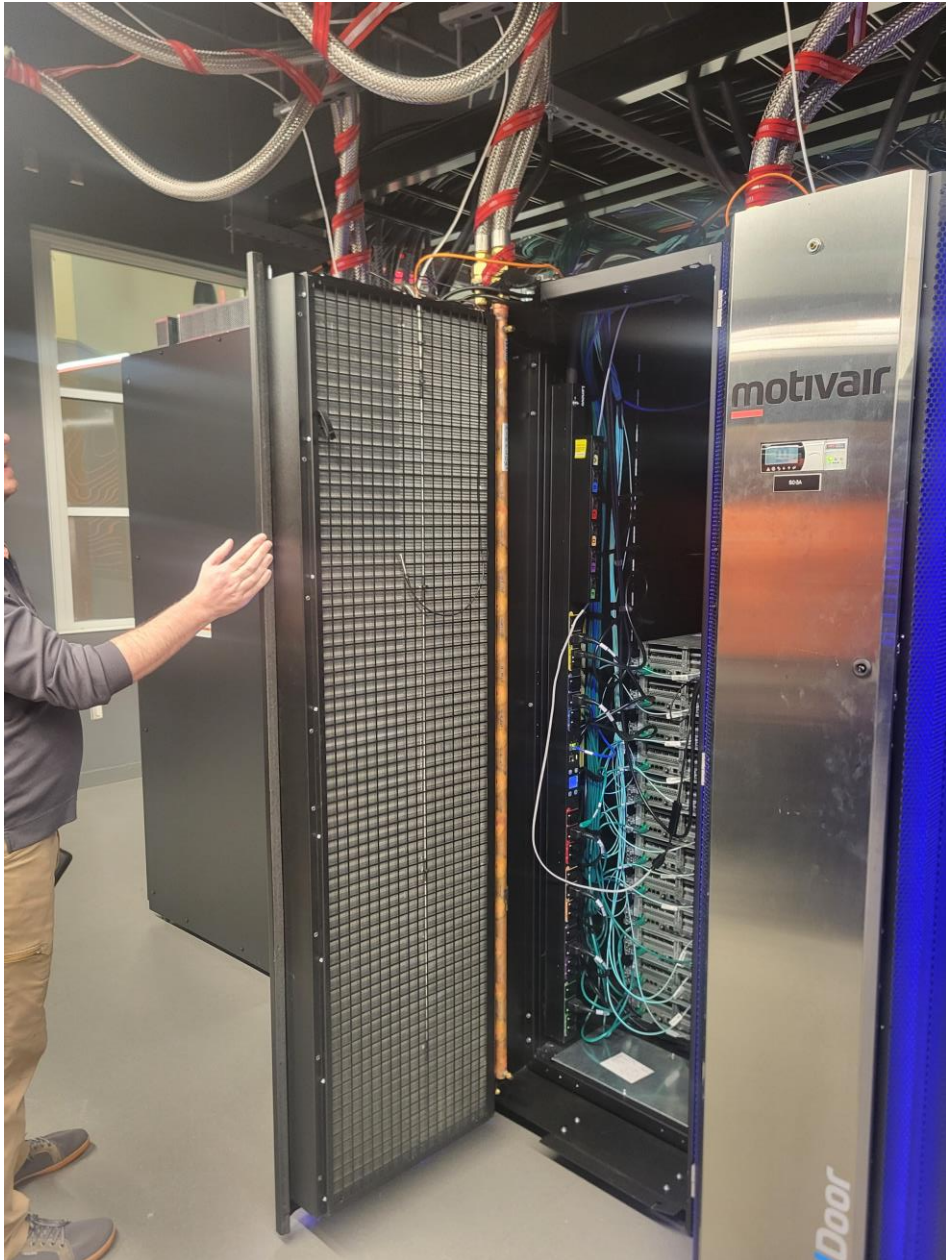
Evaporative Cooler

- + Simple: membrane & pump
- + Low power use
- High water use



Air Conditioner / Chiller

- Complex: evaporator, compressor, condenser
- High power use
- + Little or no water use



Chilled Door Liquid Server Cooling

Oklahoma State Data Center

Closed Loop Liquid Cool, No External Water



How Efficient is Data Center Water Use?

Water Use Effectiveness WUE = $\frac{\text{Annual Water Usage (Liters)}}{\text{IT Equipment Energy (kWh)}}$

Average

WUE = 1.8 liters/kWh¹

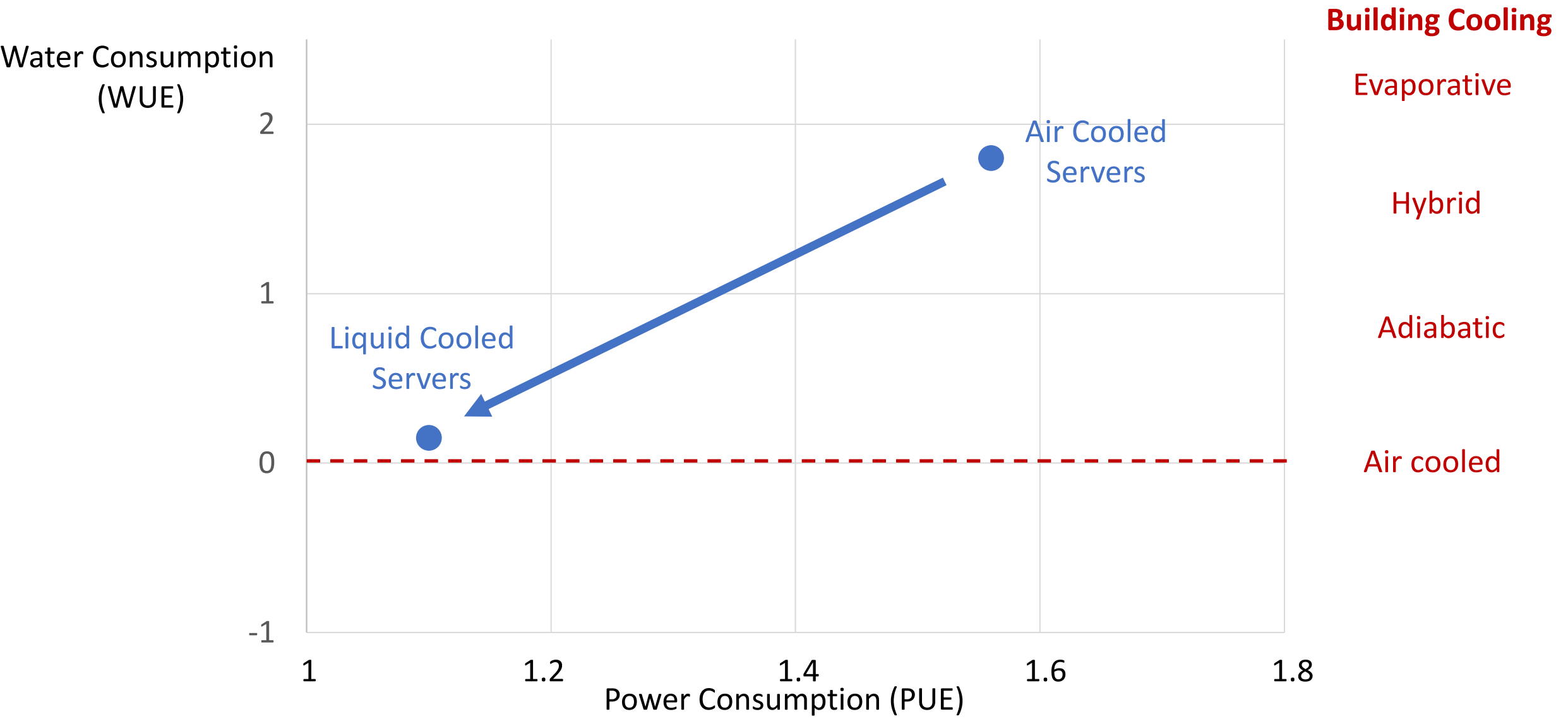
Best in Class

WUE ≤ 0.15 liters/kWh²

1. <https://www.datacenterknowledge.com/cooling/a-guide-to-data-center-water-usage-effectiveness-wue-and-best-practices>

2. <https://sustainability.aboutamazon.com/natural-resources/water#approach>

New Technology Optimizes Water & Power Use



Sources: 1. <https://blog.equinix.com/blog/2026/03/19/a-guide-to-responsible-water-use-in-data-centers/> 2. <https://www.datacenterknowledge.com/cooling/a-guide-to-data-center-water-usage-effectiveness-wue-and-best-practices> 3. <https://sustainability.aboutamazon.com/natural-resources/water#approach> 4. <https://datacenters.google/efficiency/>

How Much Water Will a Dry Cooling Data Center Use?

*The City of Round Rock monitored water use from Sabey over the past year and found that the facility uses roughly the same amount of water on an annual basis as about 15 single-family homes **(2 million gallons)**.¹*

Total Facility Capacity ²	84 MW
Active Facility	~38 MW
Water Use Effectiveness*	WUE = 0.02

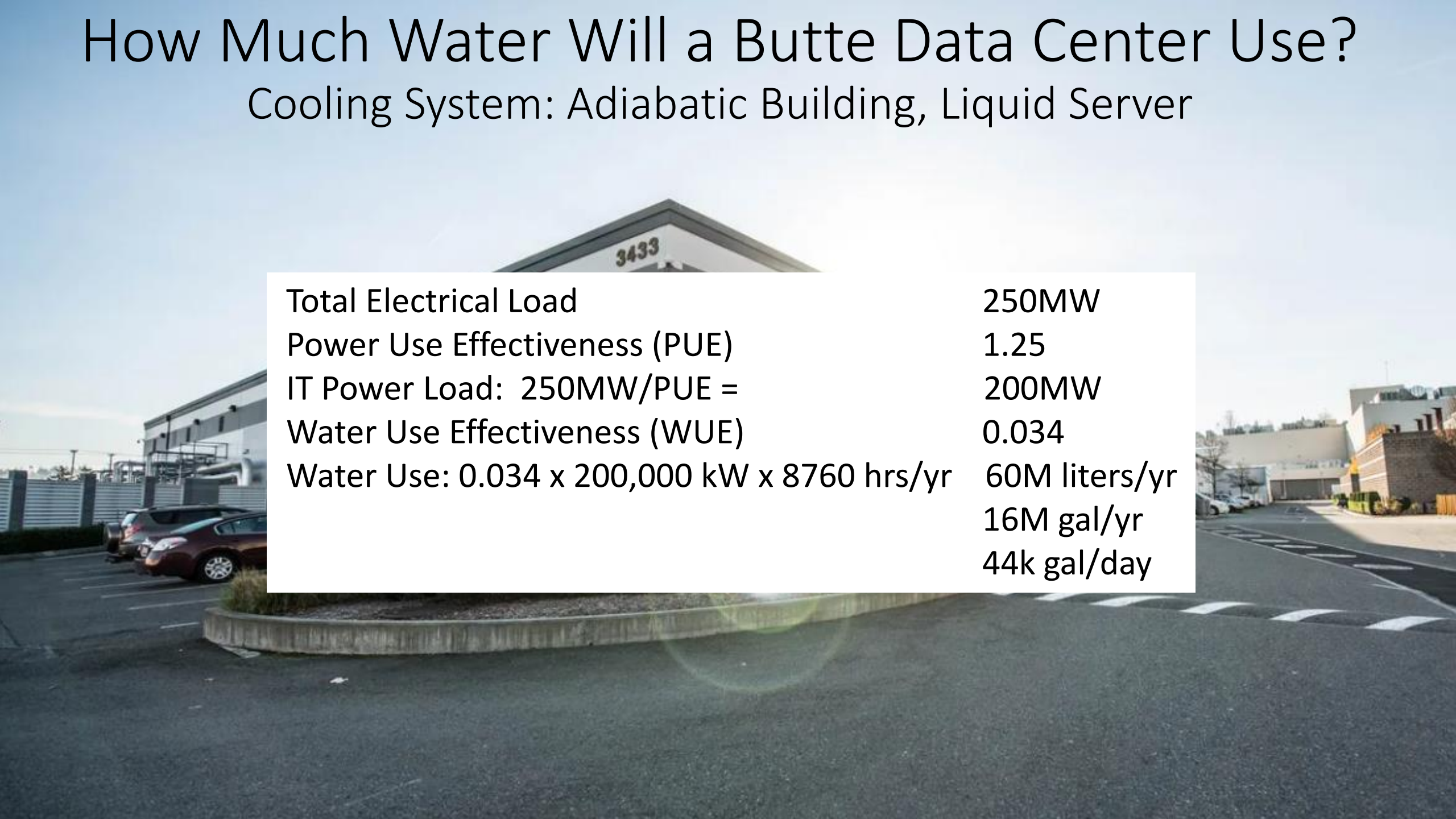
*** Water is for general facility use, not for cooling system. WUE is not applicable to this site.**

1. <https://www.roundrocktexas.gov/city-departments/administration/data-centers-in-round-rock/#7>

2. <https://sabeydatacenters.com/locations/austin-data-center>

How Much Water Will a Butte Data Center Use?

Cooling System: Adiabatic Building, Liquid Server



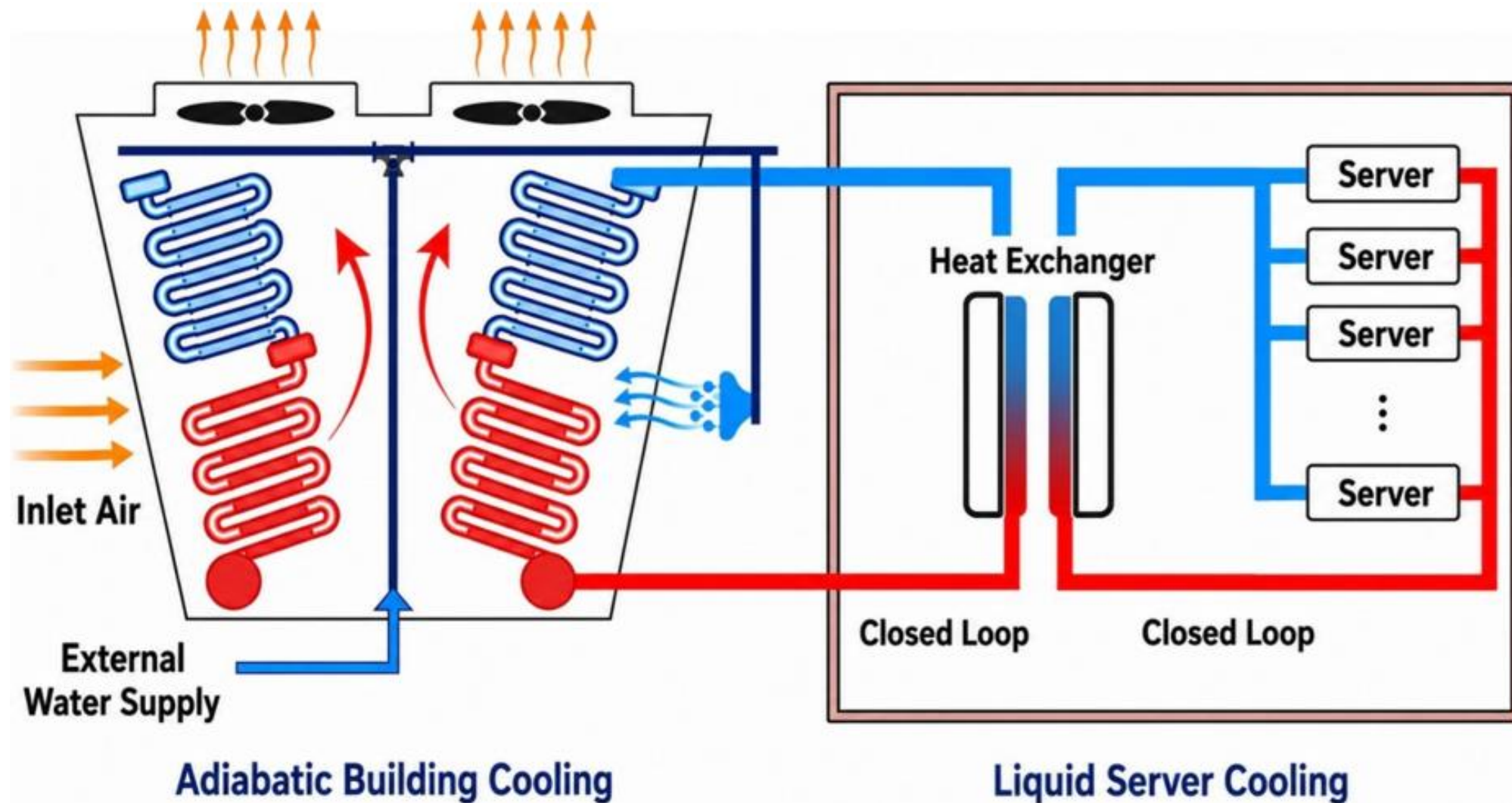
Total Electrical Load	250MW
Power Use Effectiveness (PUE)	1.25
IT Power Load: $250\text{MW}/\text{PUE} =$	200MW
Water Use Effectiveness (WUE)	0.034
Water Use: $0.034 \times 200,000 \text{ kW} \times 8760 \text{ hrs/yr}$	60M liters/yr
	16M gal/yr
	44k gal/day

Optimize Energy & Water Use

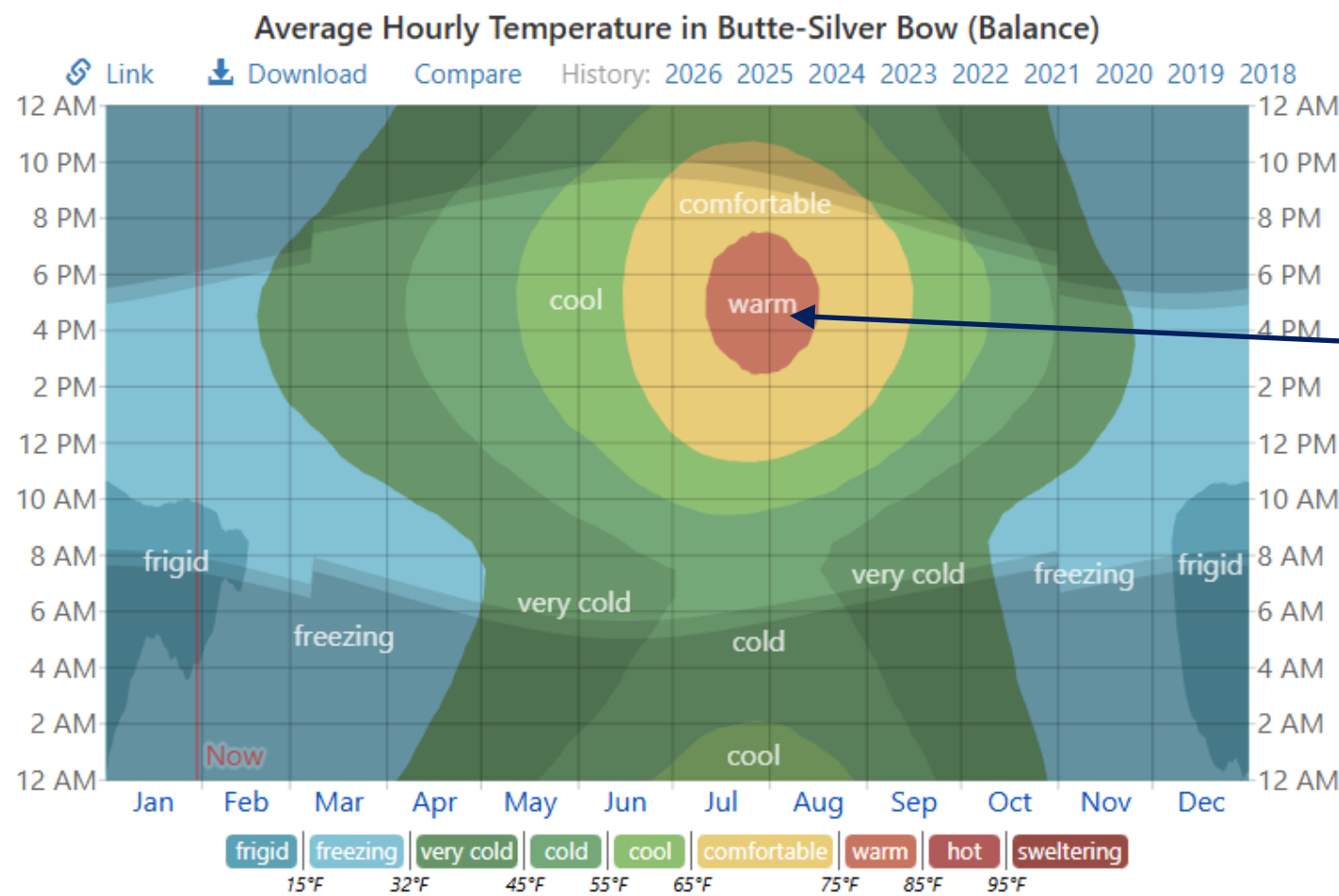
+ Simple Design

+ Low Power Use

+ No Water Use Below 80°F



Butte Air Temperature Above 80°F in July and August

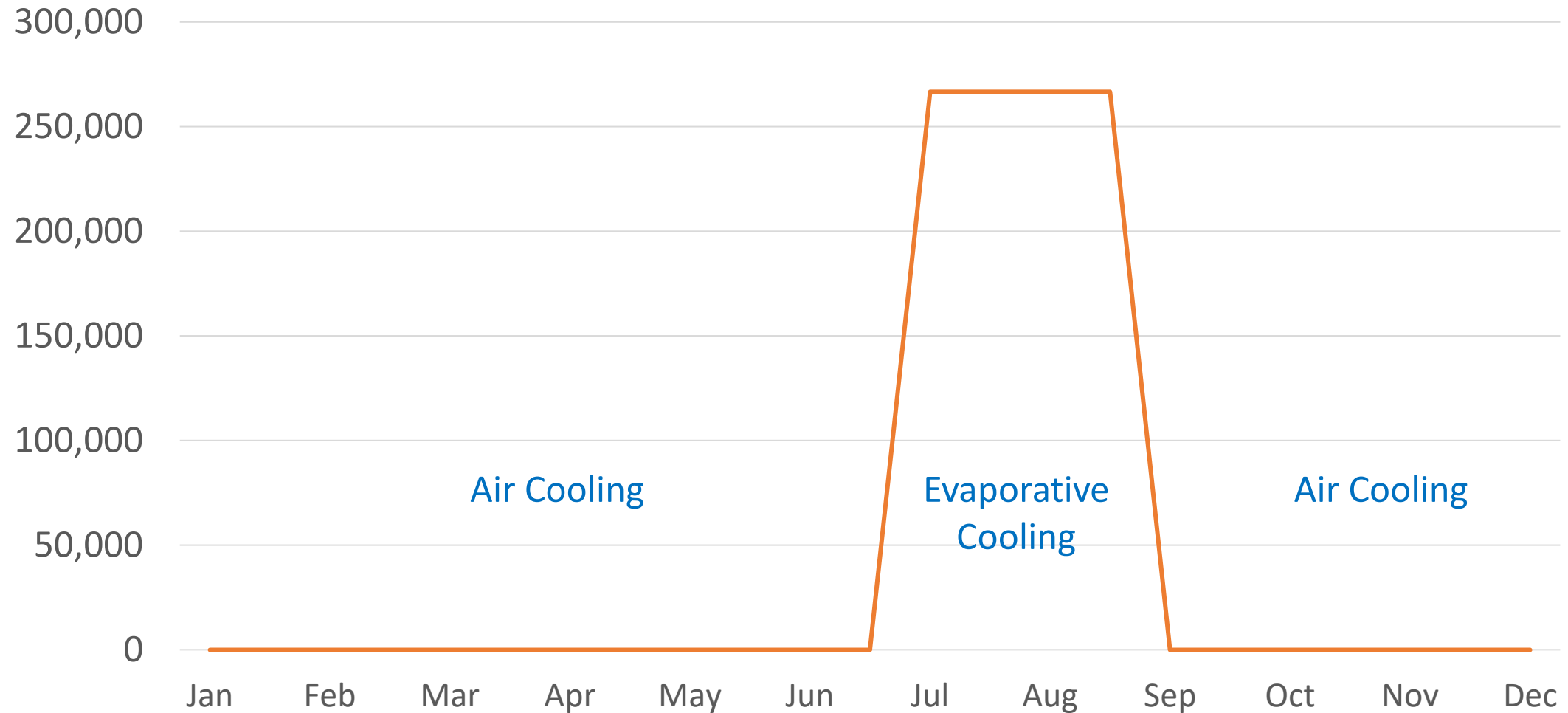


Evaporative cooling four hours per day in summer.

[Butte-Silver Bow \(Balance\) Climate, Weather By Month, Average Temperature \(Montana, United States\) - Weather Spark](#)

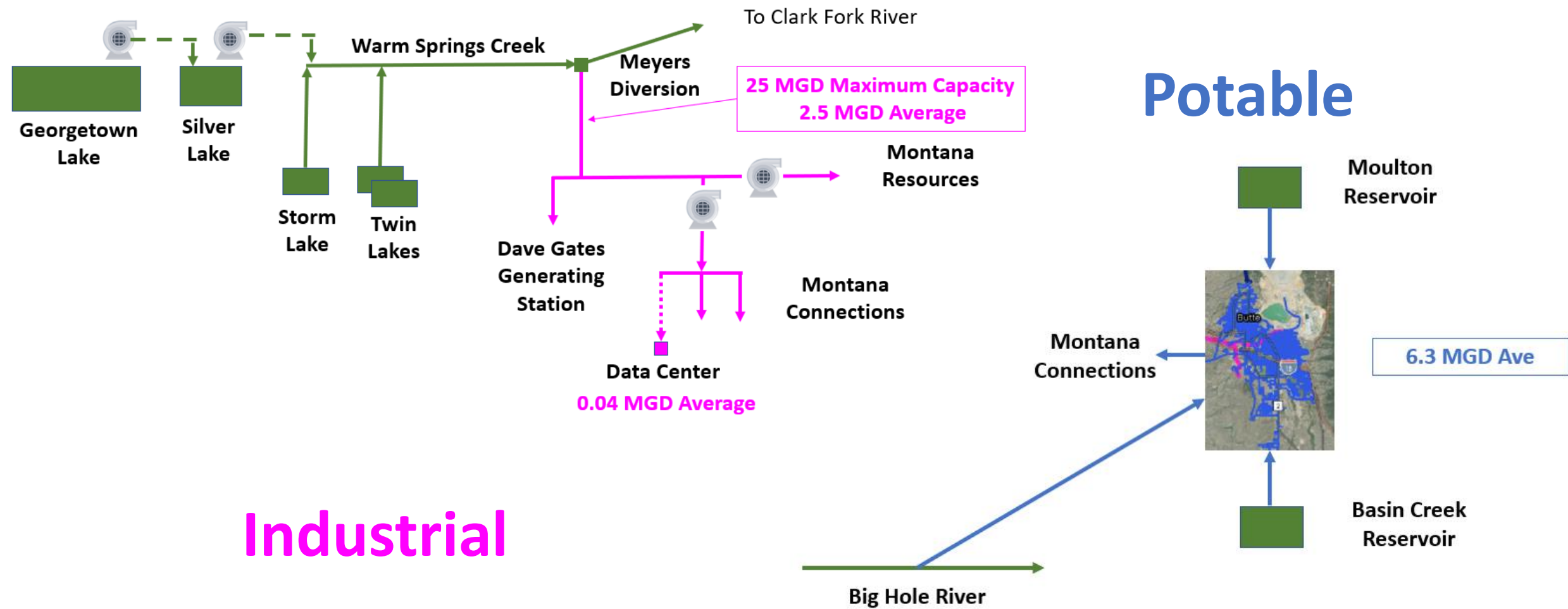
Cooling Water Use for 250MW Butte Data Center

Average Daily Water Consumption
Gallons Per Day



Butte Has a Robust Industrial Water System

MGD = Million Gallons Per Day



Typical Water Use Rates gallons/day

Average Home	300
Garden Hose	15,000
100 Room Hotel	44,000
Proposed Butte Sabey Data Center*	44,000
Butte Copper Mtn Sports Complex*	47,000
Typical Montana Golf Course*	123,000

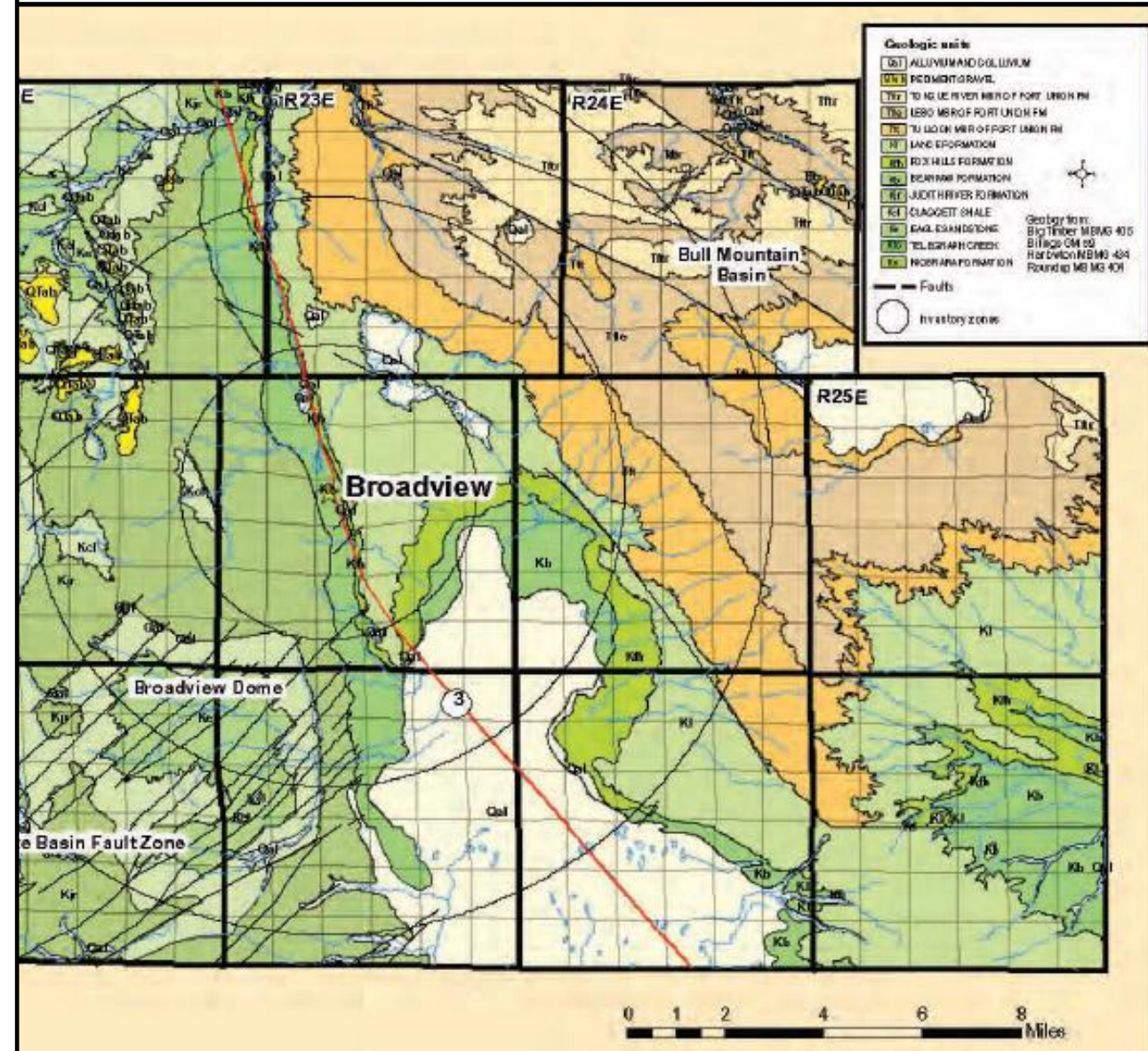
*Annualized daily averages.

Developing a Viable Water Supply for the Town of Broadview, South-Central Montana



by
Jon C. Reiten and Jay Hanson
Montana Bureau of Mines and Geology

2008



Hydrostratigraphy

Aquifer Potential



Judith River
Aquifer

Eagle Aquifer

Geologic Unit

Tongue River Member

Lebo Member

Tullock Formation

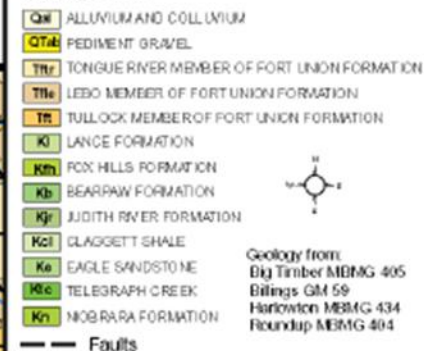
Hell Creek/Lance

Fox Hills

Kootenai Formation

Pryor Conglomerate

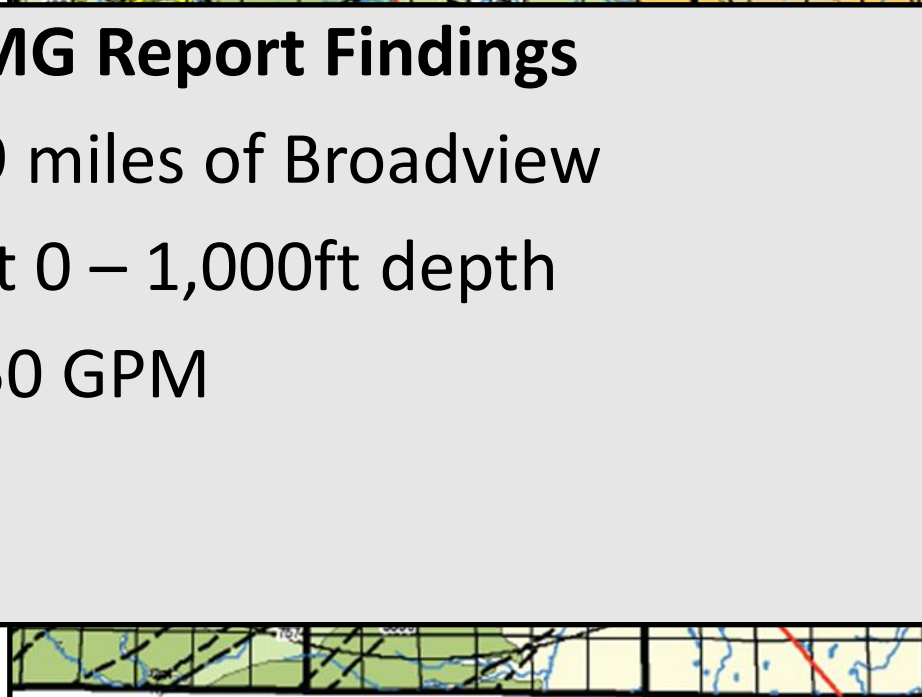
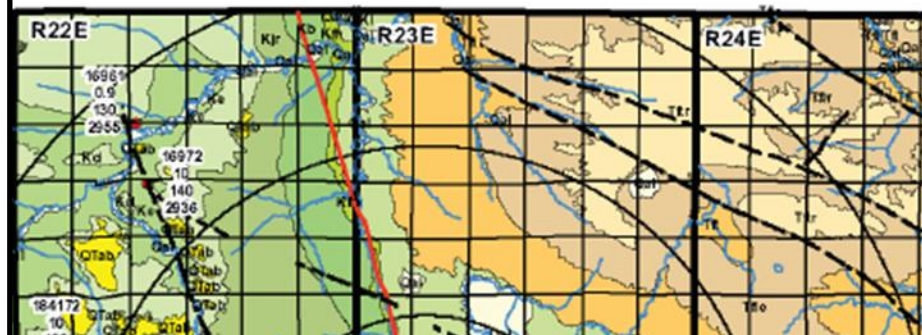
Geologic units



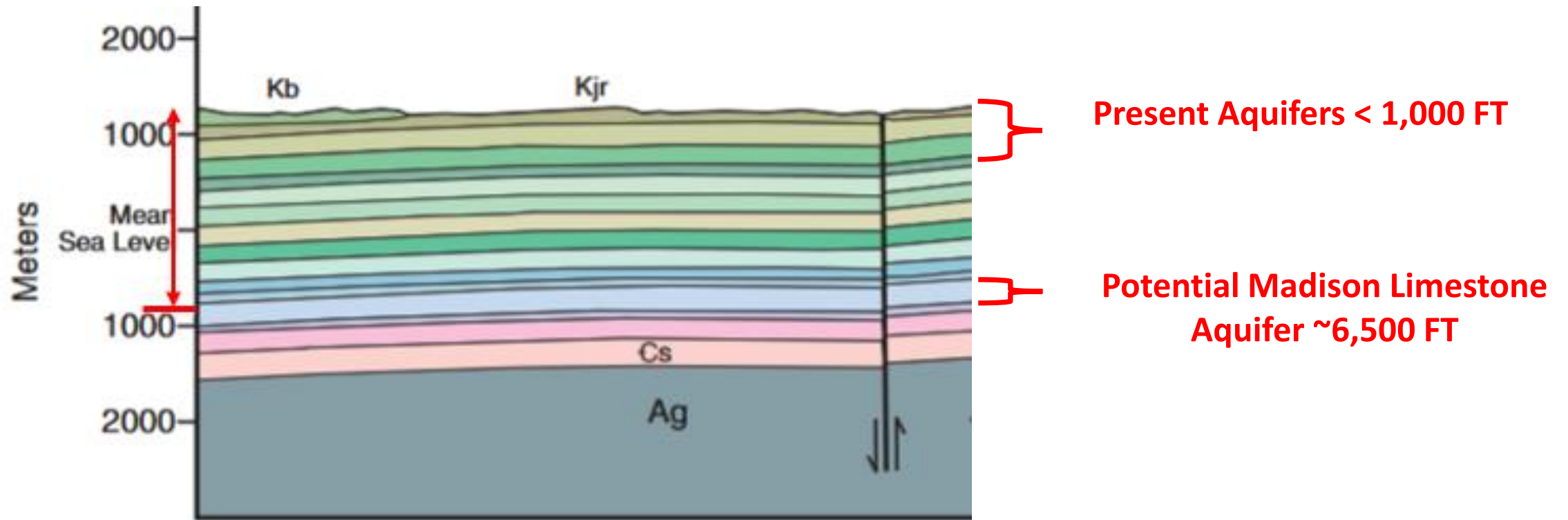
MBMG Report Findings

- ~700 wells within 9 miles of Broadview
- Multiple aquifers at 0 – 1,000ft depth
- Typical yields: 1 – 50 GPM
- Poor water quality

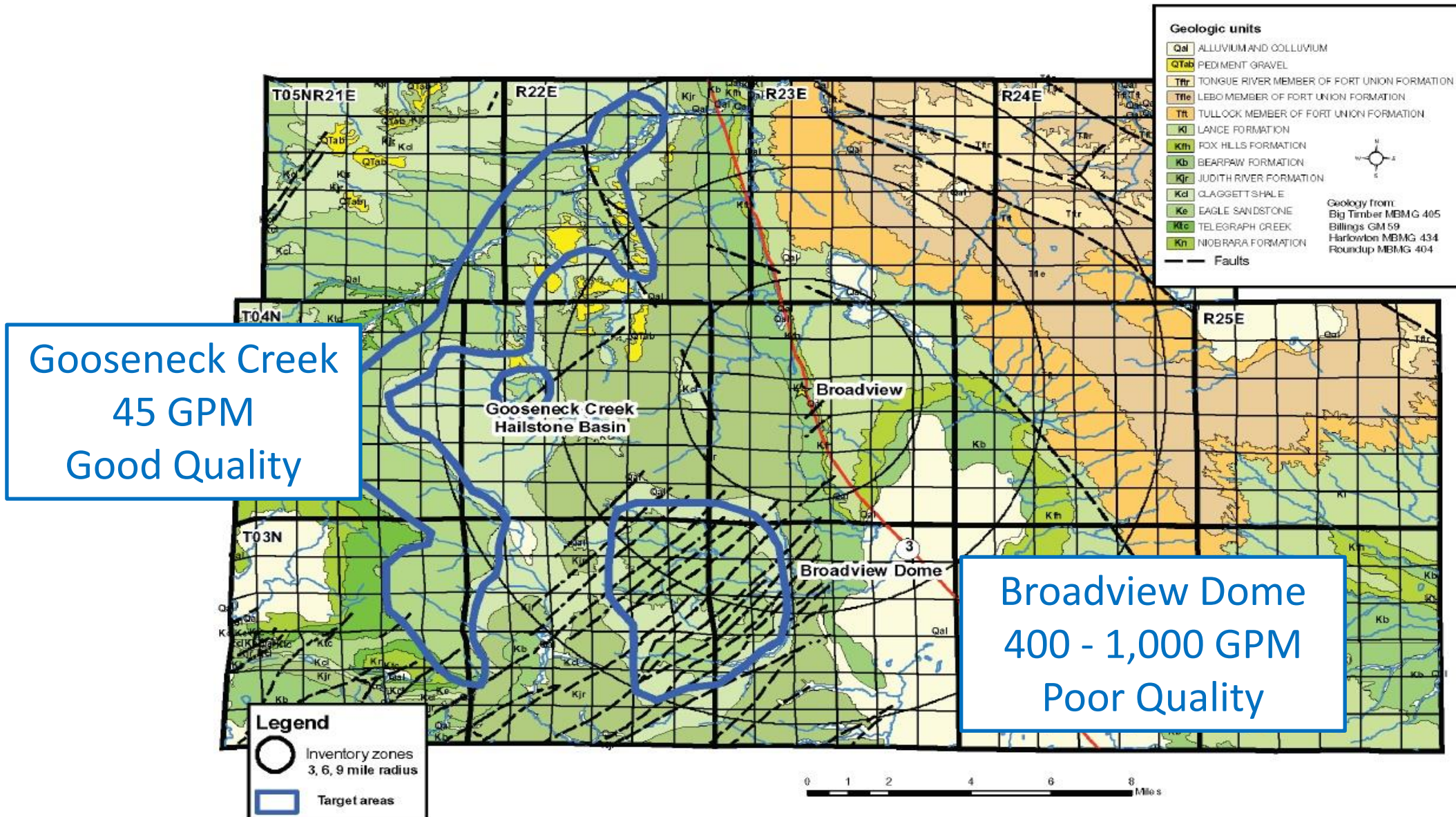
Geologic zones
9 mile radius
e Sandstone wells
GWIC ID
Yield (GPM)
Total depth (ft.)
Field SC (µS/cm)
e Sandstone springs
GWIC ID
Field SC (µS/cm)
d potential for municipal
er supply development



Proven Shallow Aquifers. Potential Deep Aquifer?

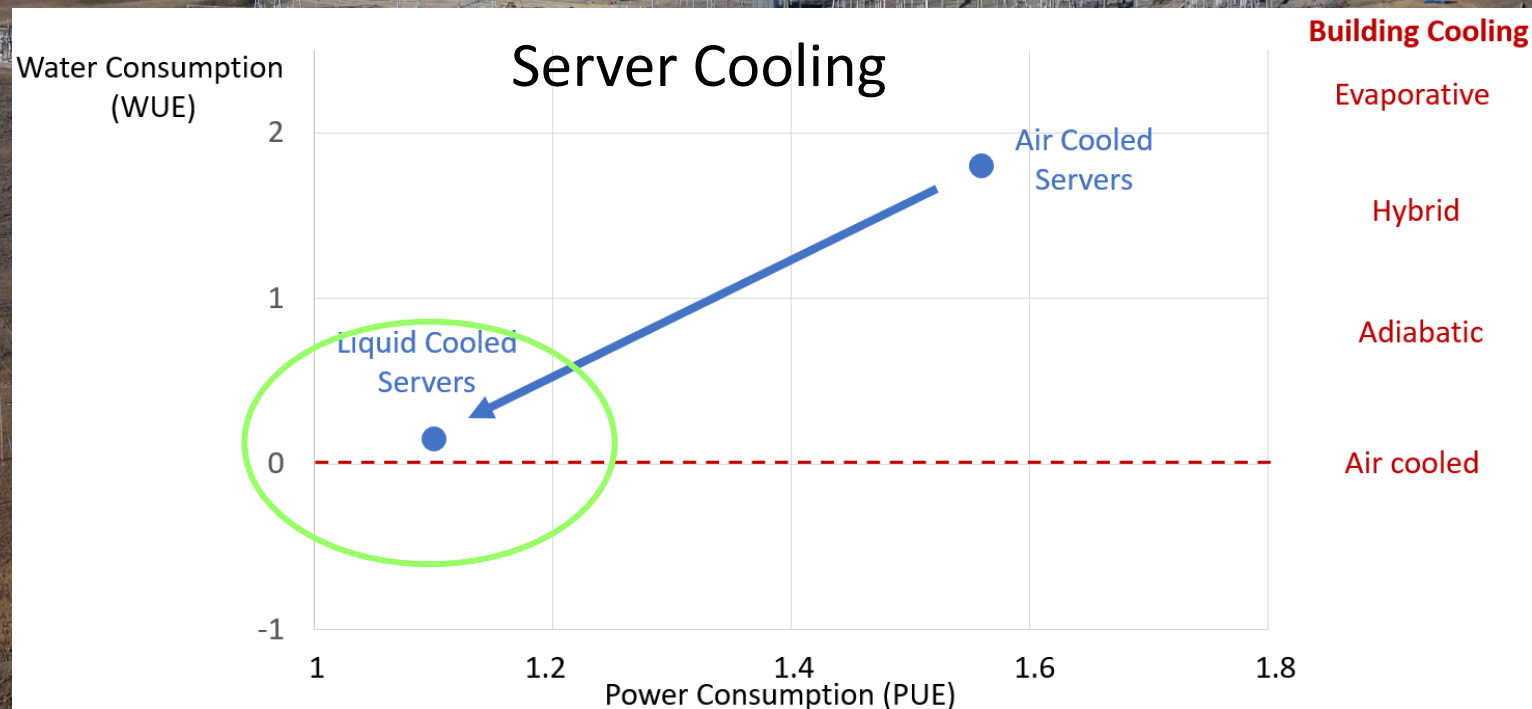


Broadview Water Supply Options



Broadview Data Center Water Use Considerations

Verify Broadview dome aquifer capacity
Build a water treatment facility
Explore deep aquifers
Use dry building cooling, liquid server cooling



U.S. Electricity on the Rise (Again)

Terawatt hours

4500

4000

3500

3000

2500

2000

1500

1000

500

0

1900

1935

1955

1975

1995

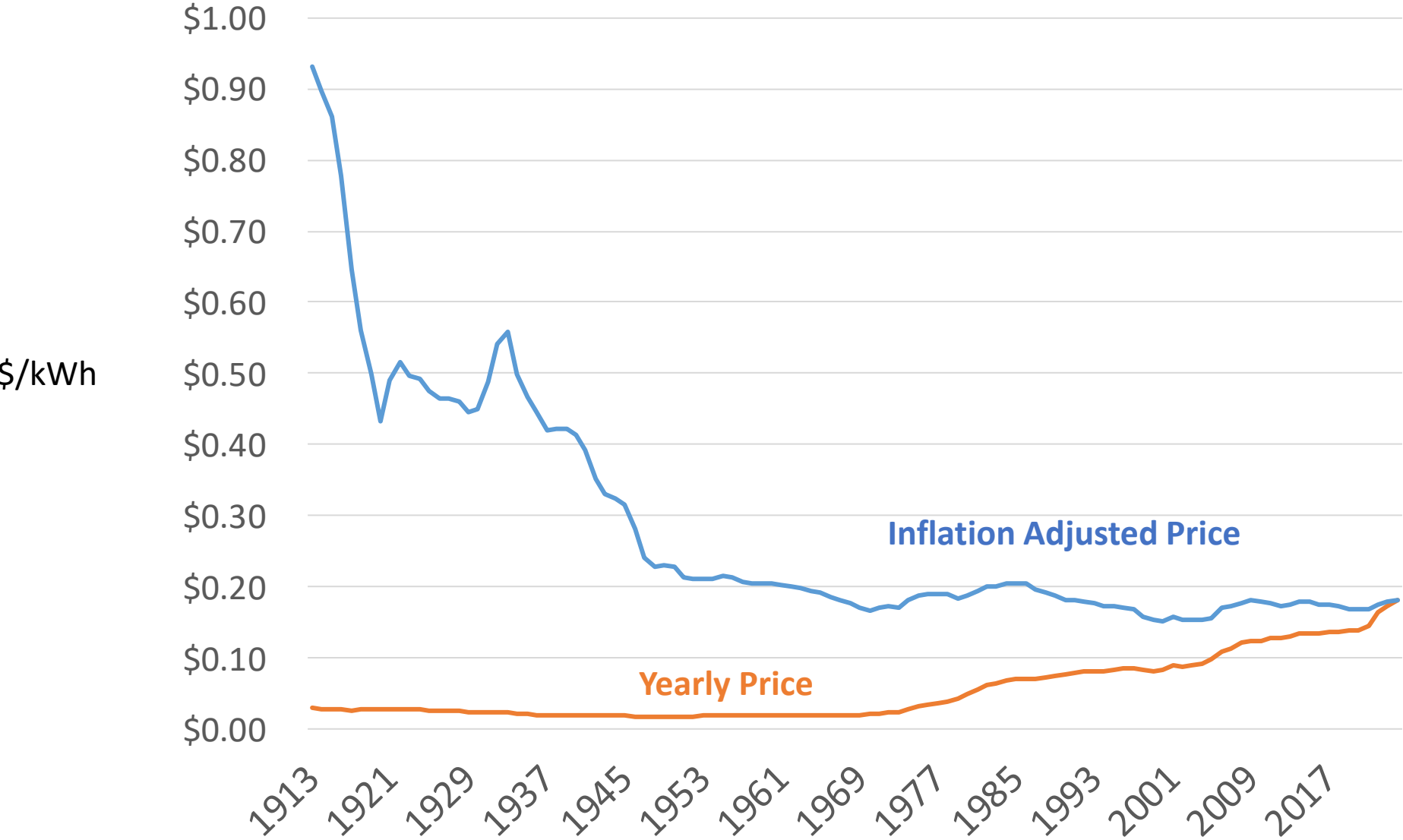
2015

4.7% CAGR

2-3% CAGR

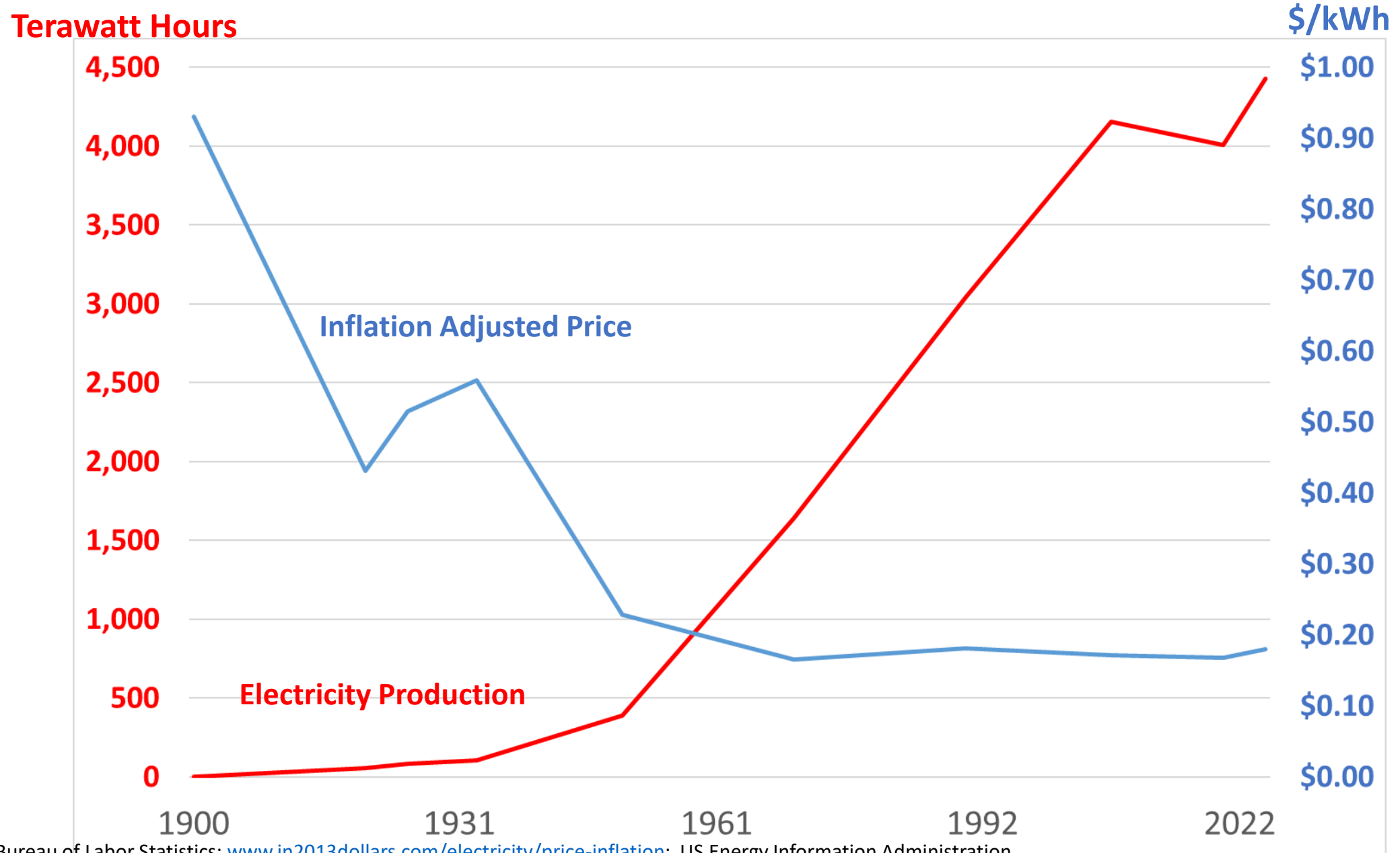
Sources: U.S. Census Bureau, Historical Statistics of the United States, Millennial Edition (1902-2000); U.S. Energy Information Administration, Electric Power Annual, Table 3.1.A (2001-2024); EIA, Today in Energy, March 2026 (2025, preliminary)

Public Service Companies Reduce Prices for a Century



Sources: US Bureau of Labor Statistics; www.in2013dollars.com/electricity/price-inflation

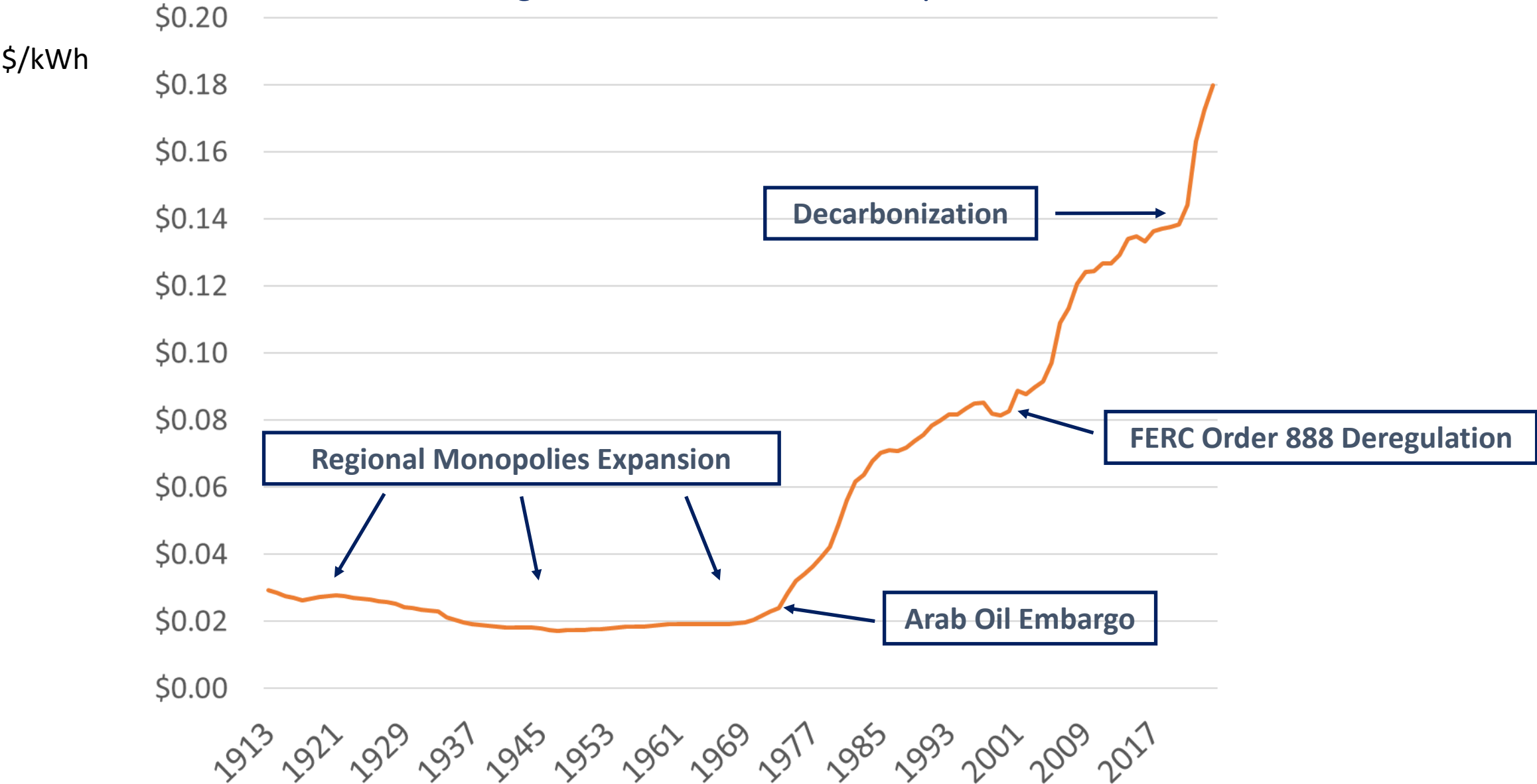
US Electricity Production vs Price



Sources: US Bureau of Labor Statistics; www.in2013dollars.com/electricity/price-inflation; US Energy Information Administration

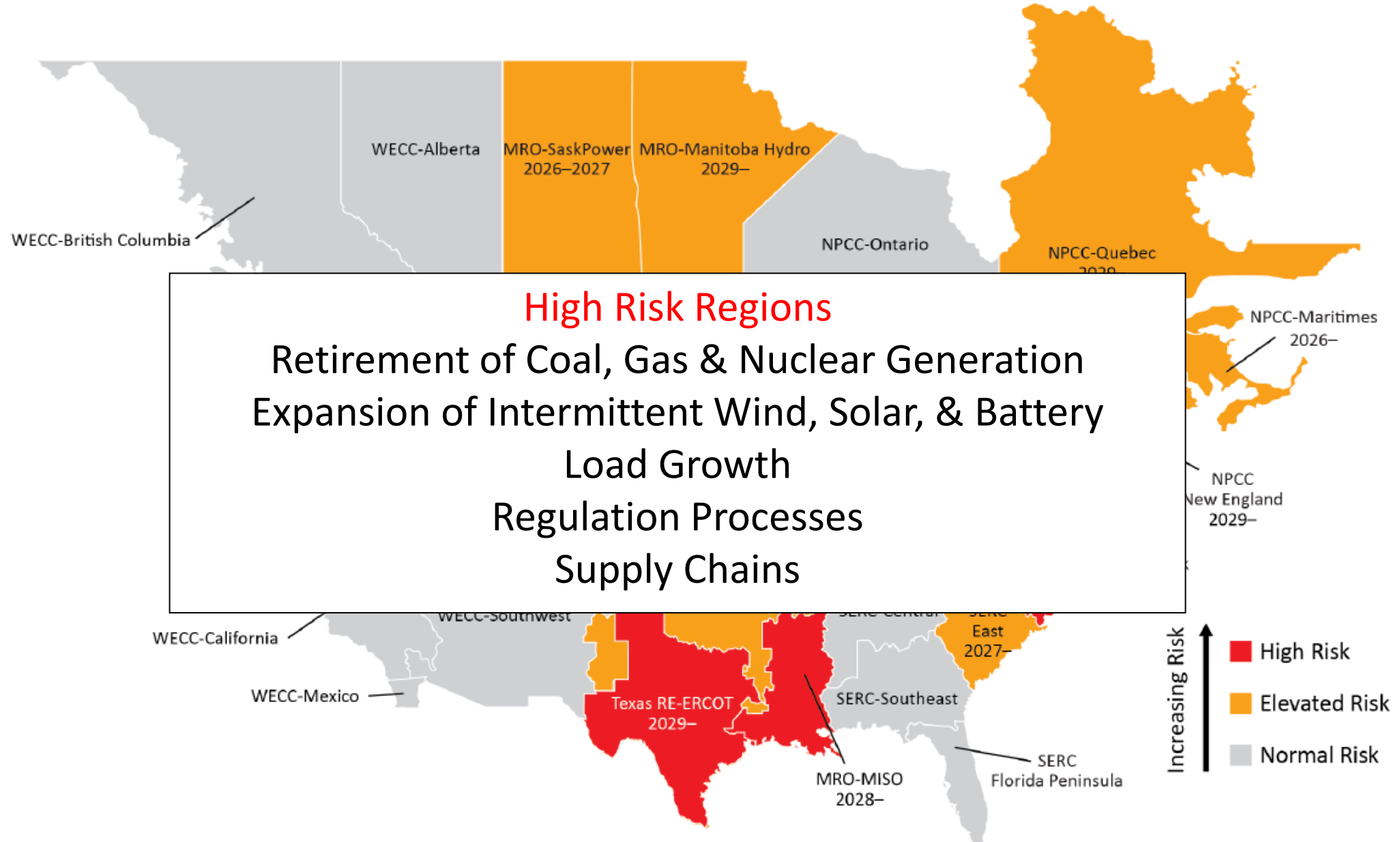
Engineering, Economics, and Politics Drive US Electricity Prices

Average US Residential Electricity Rate



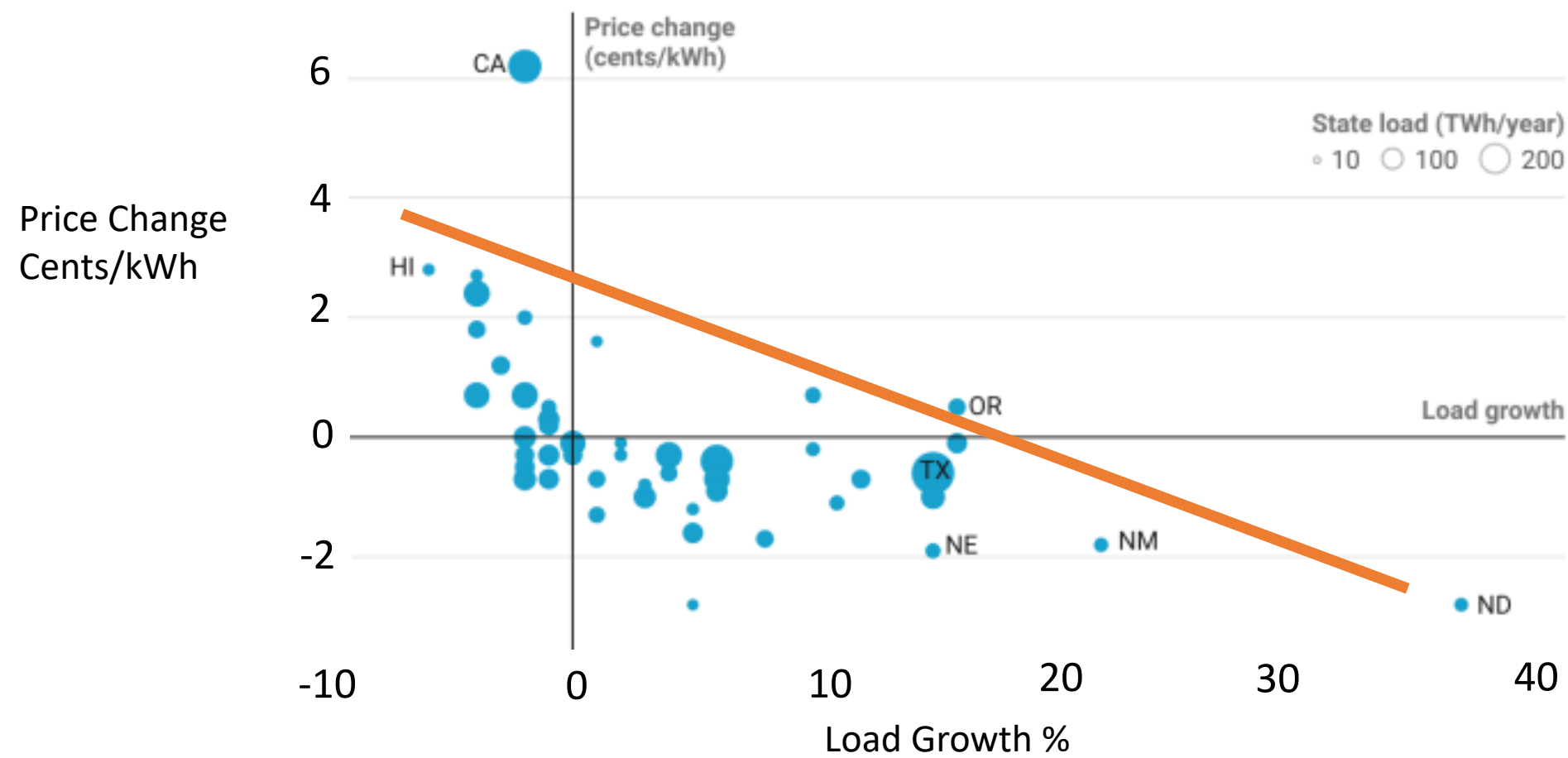
Sources: US Bureau of Labor Statistics; www.in2013dollars.com/electricity/price-inflation

NERC Assesses Electrical Supply Risks



Load Growth Reduces Retail Electricity Prices

Load Growth vs. Retail Price Changes from 2019 to 2024



Tailored for Scale: Designing Electric Rates and Tariffs for Large Loads

A Guidebook of Industry Best Practices
and Examples from Real-World
Amazon Data Center Case Studies

December 2025

Prepared by:



Energy Environmental Economics

Data Centers Benefit Ratepayers, Communities, and the Environment

Driving Load Growth: Data centers are a major source of new U.S. electricity demand and grid investment after decades of flat growth.

No Cost Shift: They pay full cost to serve and can lower rates through surplus revenue.

Investment & Jobs: Large loads accelerate grid upgrades and economic development.

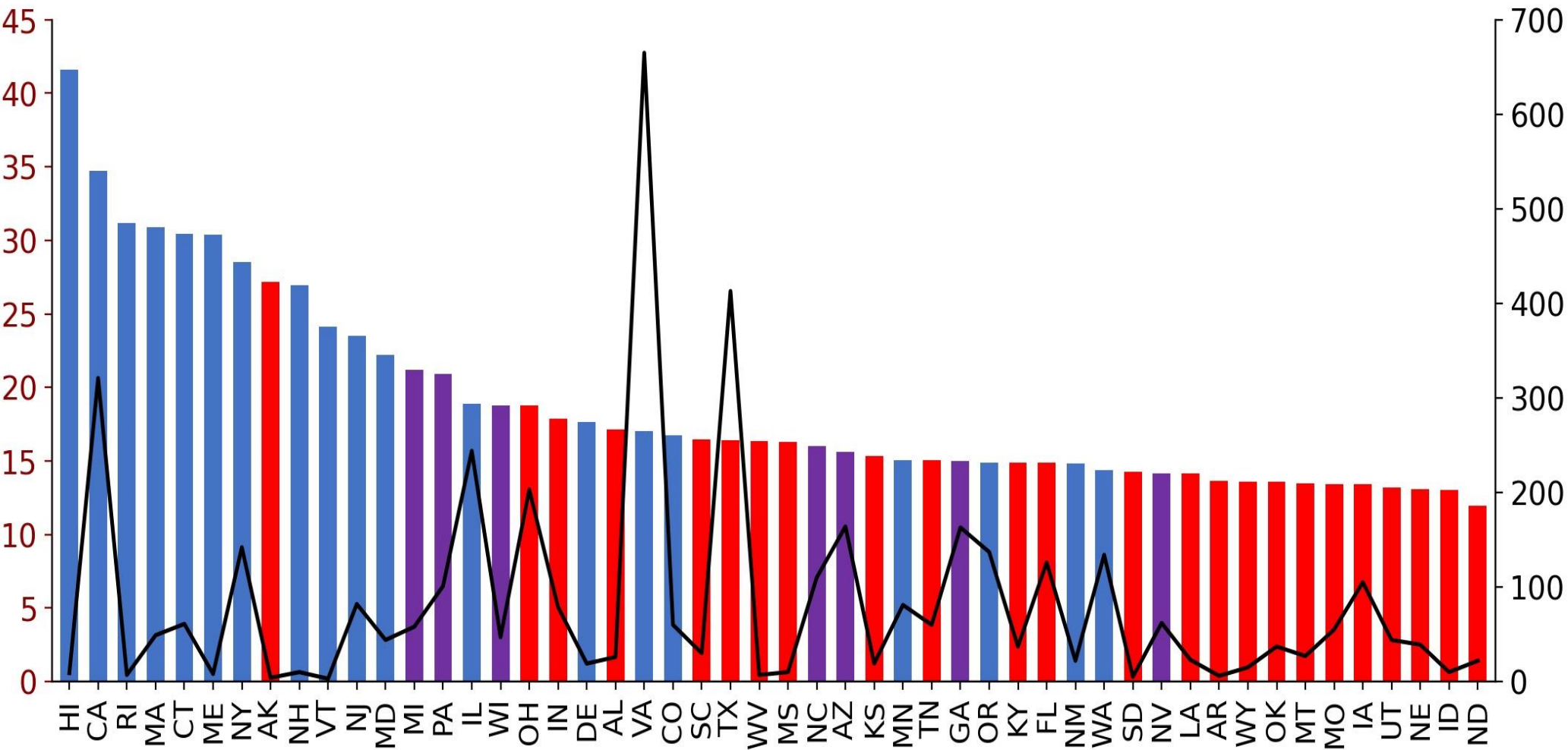
Clean Energy & Innovation: Support renewables and emerging technologies; rate design and regulation is evolving.

No Correlation Between Data Centers and Electricity Rates

Residential Rates

Cents per kWh

Data Center Count



Sources: (1) EIA Electric Power Monthly December 2025; (2) Institute for Energy Research: Blue States, High Rates; (3) <https://www.visualcapitalist.com/mapped-u-s-states-with-the-most-data-centers-in-2025/>

North Dakota

ND

\$38.4M

returned to
customers over the
past three years

\$64

average annual savings
per residential customer

// Based on 2025 data; savings can change year to year

South Dakota

SD

\$1.1M

returned to
customers over the
past three years

\$42

average annual savings
per residential customer

// Based on 2025 data; savings can change year to year

Montana

MT

\$2.2M

returned to
customers annually

\$35

average annual savings
per residential customer

// Pending MT PSC approval

Data centers
pay their own
costs and
offset costs
for others

Data Centers Have Electricity Supply Options

- Northwestern Energy

- Regulated by Montana PSC
- Comply with statute 69-8-201(1)(b) “...electricity service shall not adversely impact existing customers..”
- Integral to the Northwestern Energy rate base



- Market “Choice”

- Bilateral agreement with independent power producer (IPP)
- Regulated by FERC, uses WECC transmission network
- Independent of Northwestern Energy rate base



- Bring Your Own

- Behind/In Front of Meter



Structured Safeguards for Data Center Electric Service



NorthWestern
Energy
Delivering a Bright Future

Jan. 19, 2026

Large Load Tariff

- **Rates are protected by law:** State law requires PSC to ensure new large loads to not increase rates for existing customers.

In some cases, new large-load customers may need to provide their own energy resources.

obligations when new customers with significant energy load connect to NorthWestern Energy's Montana energy system. The tariff will ensure growth is handled responsibly, costs are allocated fairly, and protections are in place for all customers.

A new Large Load Tariff and the Montana Public Service Commission's review of electric service contracts for new large-load customers will provide regulatory oversight, predictability for new large load customers and protect existing customers from unwarranted financial risk.

In some cases, new large-load customers may need to provide their own energy generation resources.

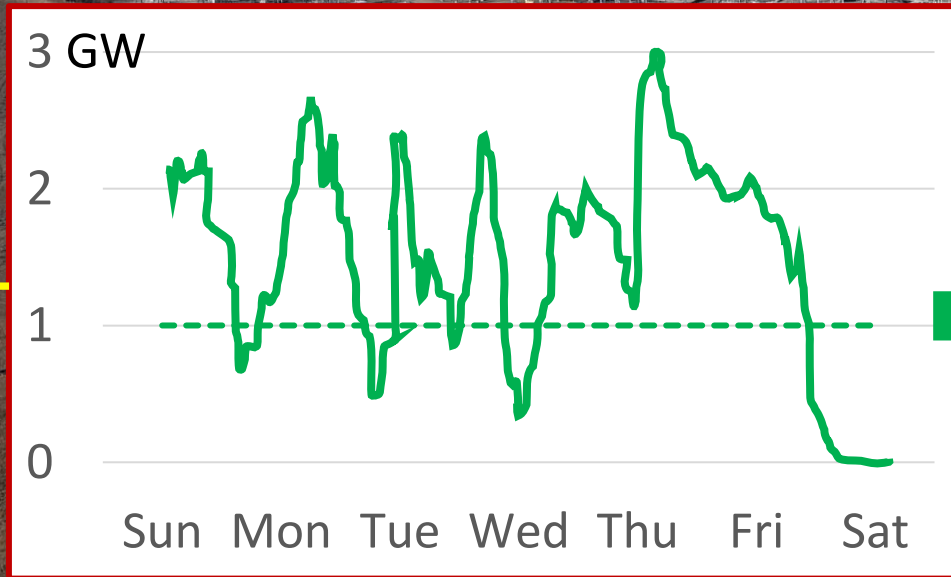
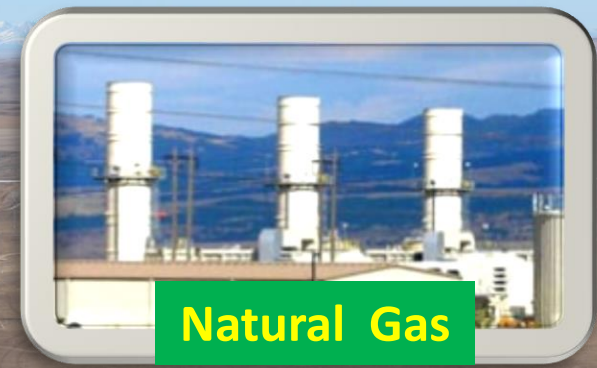
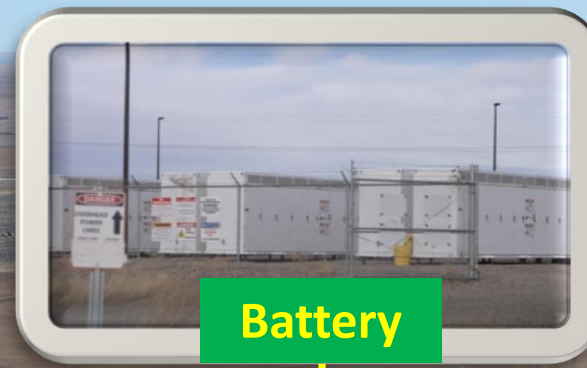
NorthWestern Energy will not compromise service reliability for existing customers. This approach ensures that growth of Montana's energy system is managed responsibly and fairly.

environmental, IPP, and state, county, and city governments.

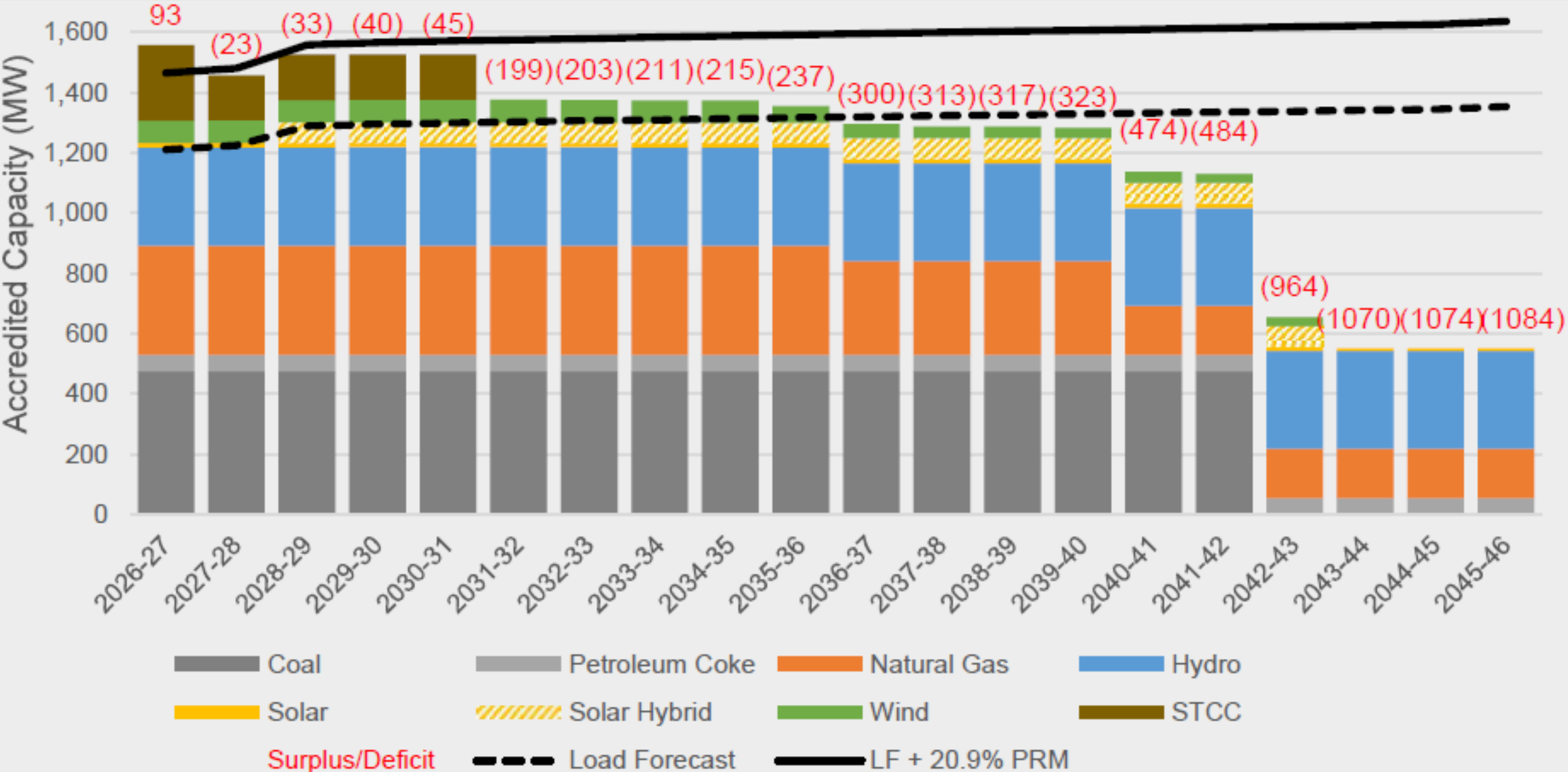
SW Montana Data Center Electricity Service

- **Electricity demand:** 50MW with expansion to 250MW
- **Source:** Existing Northwestern Energy electric supply + 370MW Colstrip PSE capacity -- OR -- build their own & contract with IPP
- **Transmission Tie:** Garrison 500kV

Broadview Data Center Energy Concept

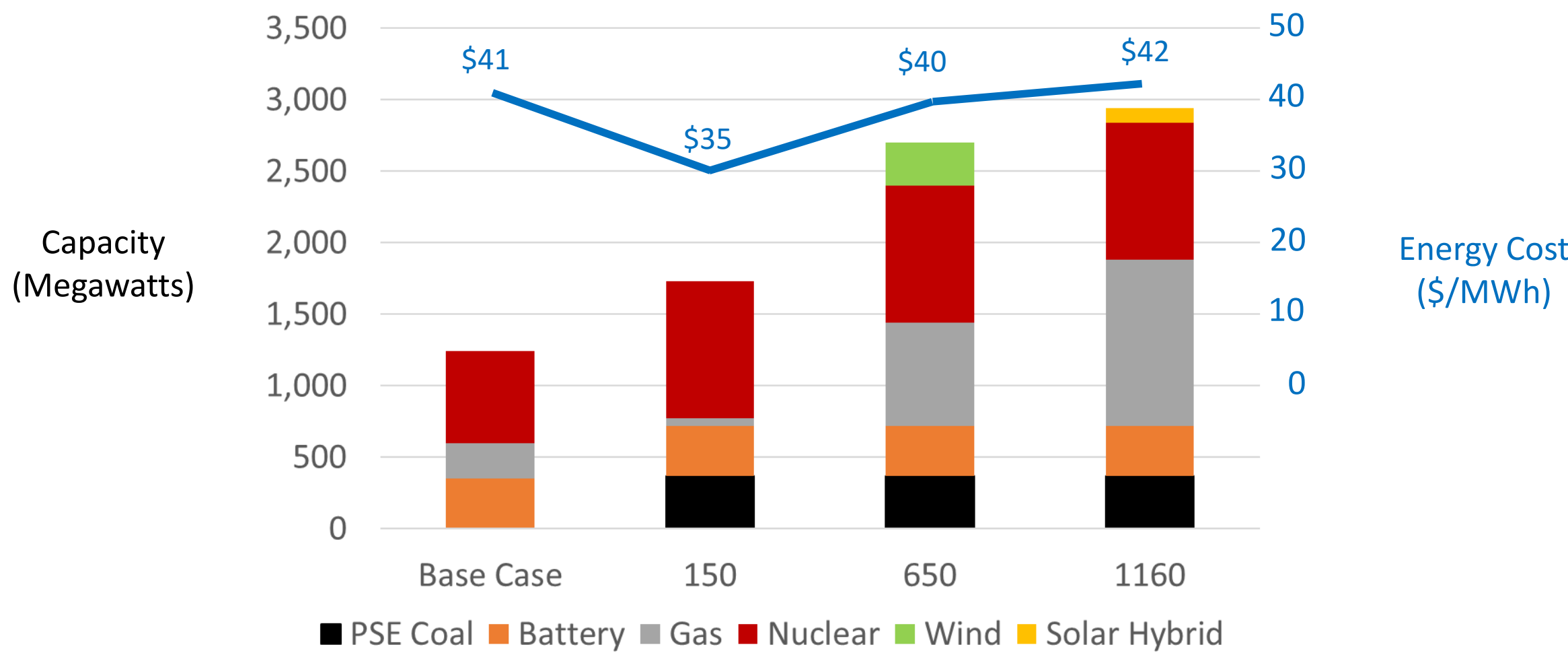


Northwestern Energy Long Term Energy Forecast



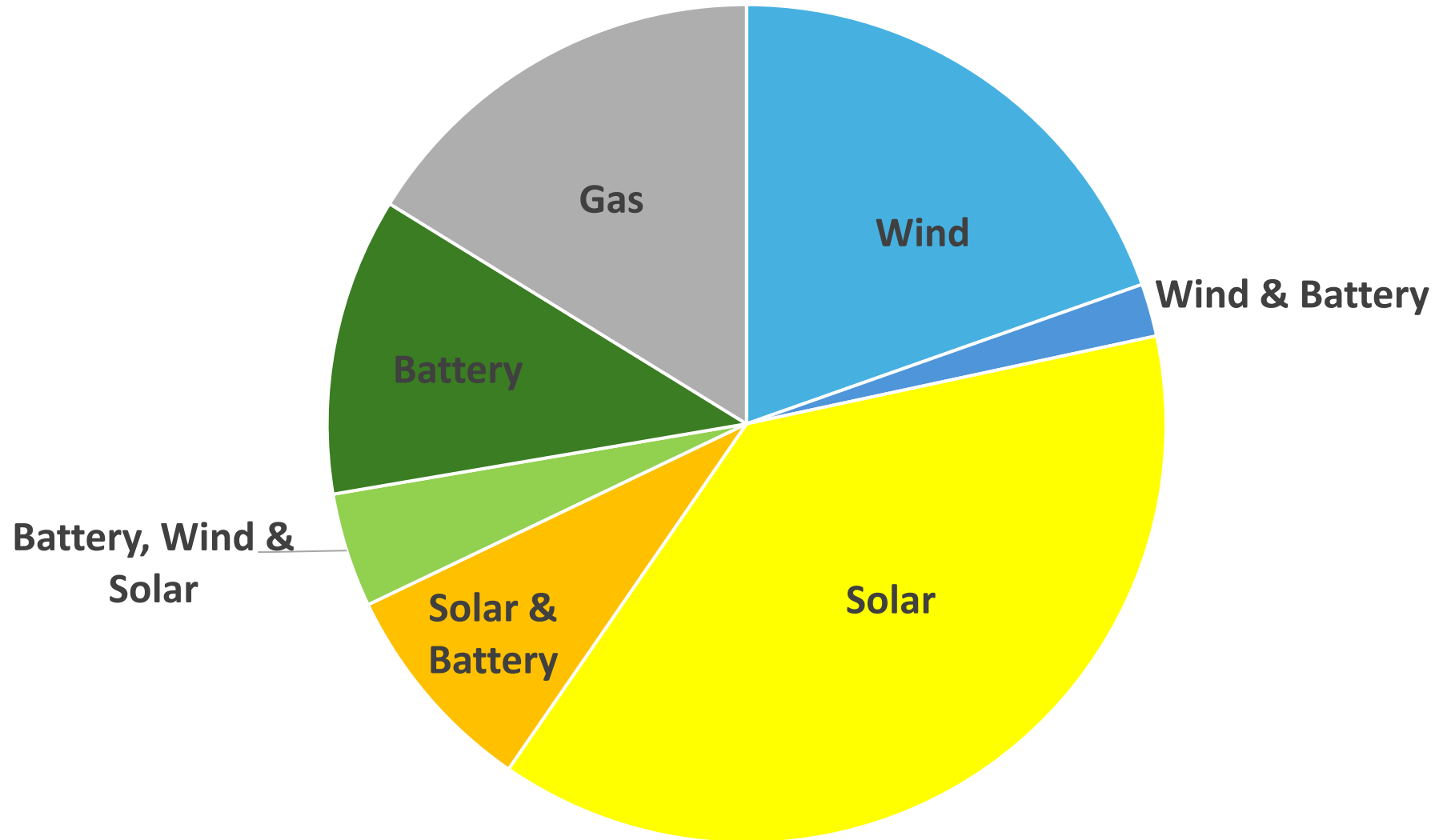
Northwestern Energy Plans for Data Center Growth

Capacity Additions (MW) for Base Case and Data Center Loads of 150, 650, 1160 MW



Montana Power Producers Plan for 11GW New Resources

Northwestern Energy Interconnection Queue



Quincy, WA: A Data Center Success Story

- **7 Data Center Campuses: 269 MW**
- No rate increase (residential: \$0.062/kWh)
- 8% of city water (food processors: 57%; residential/commercial: 33%)
- 57% of city taxes: schools, roads, medical center, wastewater plant, city hall, emergency services, water park, sports complex
- 900 direct jobs; 3,600–5,300 indirect
- Poverty rate: 30% → 6%
- Personal property tax: \$3.12 → \$0.88 per \$1,000
- High school apprenticeships & certificates

1. WA State Representative Alex Ybarra R-Quincy

[WATCH: How data centers rescued a struggling central Washington community | Washington | thecentersquare.com](#)

2. The Tulsa Flyer, James G. Wright, February 24, 2026.

3. Grant County PUD

Montana's Data Center Opportunity

- Productivity, quality of life, and national security improvement
- Electricity use is substantial, but pays for system upgrades and lower rates
- Electric rates are rising due to policy, not data center demand
- Water use is a design decision matched to meet local hydrology
- Data centers can anchor community economic development