CYBERNOMICS

THE PRICE OF INTELLIGENCE

AI DATA CENTERS, UTILITY COSTS, AND THE NEW RATEPAYER DEBATE

A visual policy and business report on who benefits, who bears the risk, and what fair AI infrastructure should require.

RESEARCH CURRENT THROUGH JULY 25, 2026

EXECUTIVE BRIEFING

AI is creating a new class of utility customer

The public debate is not whether AI matters. It is whether ordinary customers should underwrite its infrastructure.

4.4%	6.7%-12%	$9.33B
U.S. electricity in 2023	**Projected share by 2028**	**PJM capacity-market impact**
Data center share of national electricity use	DOE/LBNL forecast range	Attributed to data center load in the 2025/26 auction

CYBERNOMICS VIEW The executive takeaway

AI infrastructure can produce real economic value, but the deal structure determines whether communities gain or subsidize. Data center benefits are often concentrated in construction firms, technology companies, utilities, and local tax bases. Grid costs, market-price pressure, water use, noise, and stranded infrastructure risk can spread across households and legacy employers.

PROCEED - WITH GUARDRAILS

The best policy is neither an unconditional subsidy nor a blanket ban.

Require large-load customers to pay the costs they cause, guarantee long-term payments, add supply or flexibility, disclose public obligations, and fund measurable community benefits.

EVIDENCE STANDARD What the evidence does - and does not - prove

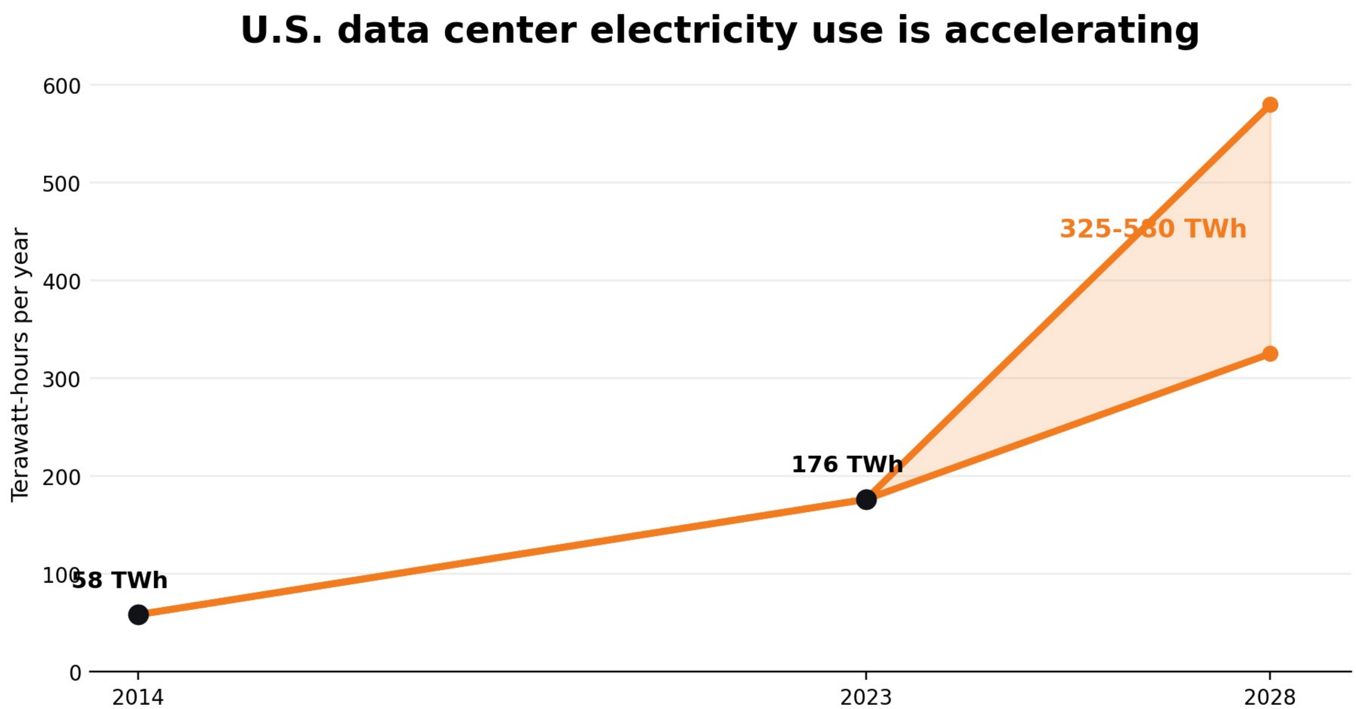
Not every increase in an electric bill is caused by AI. Fuel prices, weather hardening, plant retirements, transmission congestion, and utility capital spending also matter. Recent academic studies even disagree on the historical average effect: one finds modest price reductions from economies of scale, while another estimates retail-price increases concentrated at investor-owned utilities. The clearest forward-looking risk is cost shifting when new demand requires infrastructure faster than supply can be built.

Sources: U.S. Department of Energy/LBNL; Monitoring Analytics; Rutgers New Jersey State Policy Lab; 2026 working papers. See source notes [1], [3], [10], [11].

DEMAND

The invisible industrial revolution

AI feels digital. Its electricity demand is physical, continuous, and increasingly city-scale.



DOE/LBNL: U.S. data center electricity use rose from 58 TWh in 2014 to 176 TWh in 2023 and is projected at 325-580 TWh in 2028. [1]

3x	325-580	Up to 4.5 GW
Growth since 2014	**TWh in 2028**	**Single-site requests**
Approximately tripled over the decade	A wide range that reflects genuine uncertainty	Comparable to the average demand of an entire state

The policy challenge is speed. A data center campus can move from concept to construction faster than a new power plant or regional transmission line. When load arrives before supply, wholesale and capacity markets tighten. When a project is forecast but never materializes, customers can inherit infrastructure built for a phantom demand forecast.

THE RISK IS TIMING

Demand can be real and economically valuable while still arriving too fast for the grid.

This is why regulators are shifting from ordinary commercial tariffs to dedicated large-load contracts.

COST MECHANICS

How an AI campus reaches a household bill

The data center is not simply buying electricity. It can change what the entire system must build and reserve.

1 Large load request	>	**2** New generation + transmission	>	**3** Capacity and financing costs	>	**4** Regulatory cost allocation	>	**5** Household + business bills

Four pathways from server rack to ratepayer

1. Infrastructure

Utilities add substations, lines, generation, storage, and reserve capacity. If project-specific costs enter the general rate base, all customers can contribute.

2. Wholesale scarcity

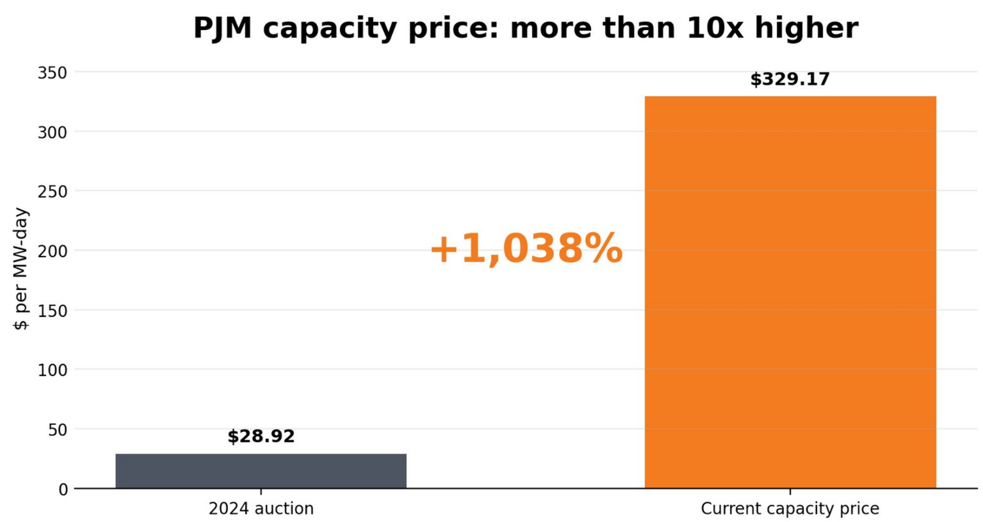
Demand that grows faster than generation increases the value of scarce energy and capacity, especially in congested regions.

3. Stranded assets

A utility can build for a large customer that delays, downsizes, moves, or closes. Without minimum payments, remaining customers absorb the fixed cost.

4. Risk transfer

Confidential contracts, generous tax incentives, and optimistic demand forecasts can move project risk away from developers and toward the public.



Reuters reported PJM capacity prices rising from $28.92/MW-day to $329.17/MW-day, driven primarily by data center growth amid stagnant supply. [4]

REAL PEOPLE

What the backlash sounds like

The sentiment is less anti-technology than anti-subsidy: residents and employers want proof that Big Tech will not transfer its costs.

BELDEN BRICK - OHIO

A 141-year-old manufacturer saw its monthly capacity charge rise from about $1,600 to $12,000. Electricity costs surged 90%, prices rose 4%, and margins still shrank. Company president Brad Belden said the charge “jumped off the page.”

Reuters, July 2026 [4]

VIRGINIA HOUSEHOLDS

Virginia’s legislative auditors estimate a typical Dominion residential customer could pay an additional $14-$37 per month by 2040 for generation and transmission under high-growth scenarios.

JLARC [2]

GEORGIA VOTERS

The AP reported that anger over utility costs and data center development contributed to voters replacing two utility commissioners in 2025. The issue has become electoral, not merely technical.

Associated Press [5]

“PAY THEIR OWN WAY”

The phrase now crosses party lines.

President Trump uses it while promoting rapid AI build-out; Democratic and Republican state leaders are also demanding cost protection, transparency, or local control.

DEDICATED ANALYSIS

Risks vs. opportunities

The same project can be a local asset or a public liability. The difference is contractual and regulatory design.

RISKS

RATEPAYER COST SHIFT
Generation, transmission, and financing costs can be spread to households and existing businesses.

STRANDED INFRASTRUCTURE
Speculative forecasts can leave customers paying for underused power assets.

GRID RELIABILITY
Large, inflexible loads can tighten reserve margins and increase emergency risk.

LOW PERMANENT JOB DENSITY
A typical large facility can employ about 50 full-time workers after a 1,500-worker construction peak.

RESOURCE + LAND PRESSURE
Water, noise, diesel backup generation, and land-use conflicts can damage community acceptance.

SUBSIDY MISMATCH
Tax incentives can remain generous after construction benefits fade.

OPPORTUNITIES

LOCAL TAX BASE
Mature Virginia markets received from less than 1% to 31% of local revenue from data centers.

CONSTRUCTION ECONOMY
Large projects support substantial short-term employment and regional supplier activity.

HIGH-WAGE OPERATIONS
Permanent staffing is limited, but many operating roles are skilled and well paid.

GRID MODERNIZATION
New demand can accelerate generation, transmission, storage, and advanced-grid investment.

AI + CLOUD CAPACITY
Data centers support digital services, productivity, security, and national competitiveness.

FLEXIBLE GRID ASSET
Batteries, backup systems, and schedulable computing can support the grid when tariffs reward flexibility.

NET VALUE IS CONDITIONAL

Opportunity wins only when private benefits carry private costs.

Cybernomics rates an unguarded project as HIGH RISK. A project with dedicated rates, take-or-pay contracts, additional power, demand response, transparency, and community benefits can become a STRATEGIC ASSET.

DEDICATED ANALYSIS

Cost-benefit analysis

A credible decision separates economic output from fiscal incentives, construction jobs from permanent jobs, and corporate power purchases from system-wide costs.

BEST-DOCUMENTED U.S. CASE Virginia evidence ledger

MEASURED BENEFITS

$9.1B annual GDP contribution
Statewide industry estimate; mostly construction-driven

$5.5B annual labor income
Direct, indirect, and induced activity

74,000 jobs
Most economic benefit occurs during construction

Up to 31% of local revenue
Observed in one of five mature local data-center markets

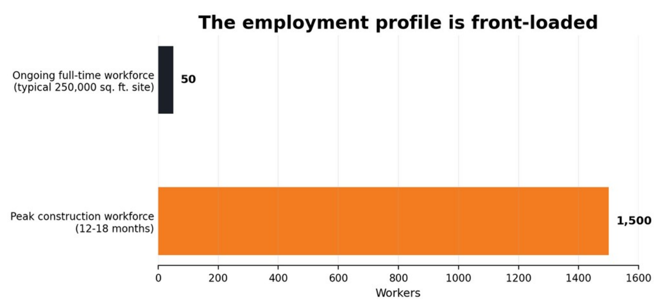
MEASURED COSTS / EXPOSURES

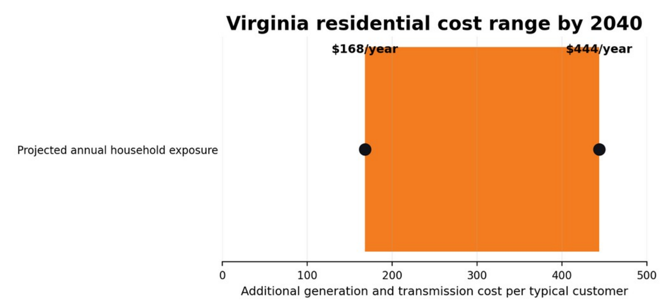
$928M FY23 tax savings
Value of Virginia sales-and-use tax exemption

$168-$444 per household/year
Projected 2040 generation and transmission exposure

Large build requirement
Virginia demand could double within ten years in the unconstrained case

50 ongoing workers/site
Typical 250,000 sq. ft. facility after construction





The ledger is not a single net-present-value calculation. It combines statewide, local, household, and facility-level evidence to show where value and exposure sit. A site-specific approval still requires a local financial model. [2]

SCENARIO TEST When does the deal become positive?

WEAK DEAL	GUARDRAILED DEAL	BEST-IN-CLASS
Tax abatement + socialized grid build + no minimum bill	Dedicated tariff + deposit + take-or-pay + verified load milestones	Guardrails + additional power + flexibility + water/noise standards + community fund
Likely negative for ratepayers	**Potentially positive**	**Strongest public value**

POLITICS

The consensus is shifting toward "build, but do not subsidize"

AI competitiveness remains popular. Cost shifting is becoming politically toxic.

What major political actors are saying

TRUMP ADMINISTRATION	Strongly pro-AI build-out. The voluntary Ratepayer Protection Pledge asks hyperscalers to build, buy, or bring needed power, pay full energy and infrastructure costs, invest locally, and support resilience. The political promise is rapid development without higher bills.
BIPARTISAN CONGRESS	H.R. 9340, the Ratepayer Protection Act, advanced from the House Energy and Commerce Committee 52-0 on July 21, 2026. It had not become law at the report date.
STATE EXECUTIVES	Florida enacted full-cost protections; New York paused new hyperscale environmental permits for up to one year; Virginia and Georgia built specialized large-load rate structures.
LOCAL OFFICIALS + VOTERS	Local leaders increasingly demand zoning control, noise and water studies, public hearings, and evidence that tax and utility agreements are enforceable.

THE NEW CENTER

Pro-growth and pro-ratepayer are no longer opposing positions.

The political center is forming around enforceable cost causation: large loads should pay for the grid assets, capacity reservations, and risks they create.

REGULATION

What is already in place

The United States is moving from ordinary commercial service toward a new regulatory category for hyperscale load.

Policy lever	Status	What it does	Cybernomics view
FERC large-load orders	**Active**	Six regional grid operators must justify or reform tariffs; focus includes cost shifting, transparency, co-location, and flexible service.	Nationally important, but implementation varies by region.
White House pledge	**Voluntary**	Companies promise full energy and infrastructure payment, local investment, and resilience support.	Useful standard; needs enforceable tariff and contract language.
Virginia GS-5	**Implemented**	Separate class at 25 MW+; certain customers pay at least 85% of contracted transmission/distribution and 60% of generation demand.	Strong stranded-cost protection.
Georgia large-load rule	**Implemented**	100 MW+ customers can receive special terms and pay site-specific and upstream system costs; minimum bills and longer contracts.	Strong model if audits verify no hidden allocation.
Oregon HB 3546	**Signed law**	Creates a separate classification for large energy-use facilities and directs cost allocation to the class.	Clear cost-causation principle.
Florida protections	**Signed law**	Prohibits passing data center costs to residential and small-business customers; requires full cost of service.	One of the clearest statutory protections.
New York moratorium	**Active**	Pauses state environmental permits for new hyperscale centers for up to one year while standards are developed.	Strong pause; risks losing investment if rules take too long.

Sources: FERC, White House, Virginia SCC, Georgia PSC, Oregon Legislature, Florida Governor, and New York Governor. [6]-[9], [12]-[15].

SOLUTIONS

Seven guardrails for fair AI infrastructure

The goal is not to stop intelligence. It is to stop hidden subsidies and unmanaged infrastructure risk.

1 DEDICATED LARGE-LOAD RATE

Create a separate customer class so household and small-business rates do not absorb project-specific costs.

2 TAKE-OR-PAY CONTRACT

Require long-term minimum payments for contracted generation, transmission, and distribution capacity.

3 REAL PROJECT MILESTONES

Demand site control, deposits, credit support, and construction milestones before the grid builds for speculative load.

4 ADDITIONAL POWER

Require new generation, storage, or firm capacity that is genuinely incremental rather than merely redirected from existing users.

5 FLEXIBLE COMPUTE

Reward curtailment, batteries, backup support, and workload shifting during scarcity events.

6 COMMUNITY TERMS

Set enforceable water, noise, emissions, workforce, road, emergency-services, and community-benefit requirements.

7 TRANSPARENCY + CLAWBACKS

Publish cost-allocation methodology and reclaim incentives when jobs, investment, efficiency, or public benefits are not delivered.

CYBERNOMICS PRINCIPLE

The companies receiving the value should carry the risk. Public benefit should be explicit, measurable, and enforceable.

BEST NEAR-TERM TOOL

The tariff and contract matter more than the press release.

A voluntary pledge is strongest when converted into a regulator-approved rate, a long-term minimum bill, a deposit, and transparent reporting.

CYBERNOMICS FRAMEWORK

A local approval scorecard

Before approving a large data center, decision-makers should be able to answer every question below with documentary evidence.

Approval test	Minimum evidence	Why it matters
Cost causation	Independent utility study showing all incremental generation, transmission, distribution, and financing costs assigned to the project.	Prevents hidden ratepayer subsidy.
Stranded-cost protection	Deposit, parent guarantee, cancellation fee, minimum-demand payment, and long-term contract.	Protects customers if the project changes.
Power additionality	Named generation/storage resources, delivery schedule, interconnection plan, and firm-capacity strategy.	Avoids simply reallocating scarce power.
Grid flexibility	Curtailment rights, demand response, batteries, backup-generation rules, and measurable availability.	Turns a large load into a reliability resource.
Economic durability	Construction and permanent jobs separated; local tax revenue net of incentives; supplier plan; clawbacks.	Tests whether benefits outlast construction.
Community safeguards	Water budget, acoustic study, emissions plan, traffic plan, emergency-services contribution, and public complaint process.	Makes local impact governable.
Transparency	Public summary of rates, incentives, forecasts, milestones, and annual compliance.	Allows voters and regulators to verify promises.

FINAL ASSESSMENT

AI data centers are neither automatically good nor automatically harmful.

They are large infrastructure deals. Treat them with the financial discipline of a power plant, the transparency of a public-private partnership, and the risk controls of project finance.

Cybernomics recommendation: support projects that can prove full-cost responsibility, additional energy, grid flexibility, durable community value, and enforceable transparency. Delay or reject projects that depend on socialized infrastructure, speculative demand, or benefits that exist only during construction.

METHODOLOGY

Sources and research notes

Primary government, regulator, market-monitor, academic, and major-news sources were prioritized. Figures are rounded only where noted.

1. **U.S. Department of Energy / Lawrence Berkeley National Laboratory -** 2024 Report on U.S. Data Center Energy Use: 58 TWh in 2014, 176 TWh in 2023, and 325-580 TWh projected in 2028.
Open source

2. **Virginia Joint Legislative Audit and Review Commission -** Economic benefits, staffing profile, tax incentive value, grid build requirements, and $14-$37 monthly residential exposure estimate.
Open source

3. **Monitoring Analytics - Independent Market Monitor for PJM -** Data center load attributed to $9.332 billion in additional 2025/26 capacity-auction revenues.
Open source

4. **Reuters -** Belden Brick case; PJM capacity-price change; manufacturing impacts. July 7, 2026.
Open source

5. **Associated Press -** Political backlash, voter sentiment, and the debate over “fair share.” February 12, 2026.
Open source

6. **Federal Energy Regulatory Commission -** June 18, 2026 orders to six regional grid operators on large-load tariff reform.
Open source

7. **The White House -** Ratepayer Protection Pledge and July 23, 2026 expansion.
Open source

8. **Virginia State Corporation Commission -** GS-5 large-load rate class and minimum contracted demand requirements.
Open source

9. **Georgia Public Service Commission -** Large-load rules, minimum billing, contract terms, and stated ratepayer protections.
Open source

10. **Rutgers New Jersey State Policy Lab -** Review finding limited detectable local residential effects through 2024, while emphasizing future infrastructure risk.
Open source

11. **2026 electricity-price working papers -** Conflicting causal estimates illustrate why historical averages should not substitute for forward-looking cost-allocation analysis.
Open source

12. **Oregon Legislative Information System -** HB 3546: classification and cost allocation for large energy-use facilities.
Open source

13 **Office of Florida Governor Ron DeSantis -** 2026 law requiring data centers to pay full cost and protecting residential and small-business customers.
Open source

14 **Office of New York Governor Kathy Hochul -** Temporary moratorium on new hyperscale data-center environmental permits while standards are developed.
Open source

15 **U.S. House Committee on Energy and Commerce -** H.R. 9340 advanced 52-0 from committee on July 21, 2026; not yet enacted at the report date.
Open source

Research note: Policies and tariffs are evolving rapidly. This report reflects public information available through July 25, 2026 and should not be treated as legal, regulatory, or investment advice.