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AI Power Demand and the US Generation Build-Out

How much load is real, what is being built to serve it, and who pays

The Power Bill — Research Desk
Coverage: The Power Bill

ABSTRACT

Can the US generation fleet absorb AI-driven load growth without breaking reliability or price stability — and who captures the value? This report reconciles the demand estimates (EIA, LBNL/DOE, Grid Strategies, PJM) into a defensible 2030 range, costs the supply response across gas, nuclear/SMR, renewables and storage at current build prices, and traces the price and equity consequences. US data centers consumed ~176 TWh (4.4% of load) in 2023; LBNL/DOE put 2028 use at 325–580 TWh (6.7–12%). The binding constraint is not fuel but equipment and interconnection: heavy-duty gas turbines are sold out to ~2029–2030 with ~3-year lead times and prices nearing $600/kW, and PJM capacity cleared at $329.17/MW-day for 2026/27 (up >800% in two years). Our base case sees ~80–100 GW of incremental data-center peak load by 2030, served disproportionately by gas plus nuclear uprates/restarts, with SMRs immaterial before 2030. The implication: scarcity rents accrue to incumbent dispatchable generators and electrical-equipment suppliers, while load-zone ratepayers absorb the capacity bill — a wealth transfer the market is only beginning to price.

Keywords: data center power demand, AI electricity load, US generation build-out, PJM capacity prices, gas turbines, SMR nuclear, LCOE, independent power producers, grid reliability, electricity prices

Executive Summary

US electricity demand is growing for the first time in two decades, and AI data centers are the proximate cause. After roughly 0.1%/yr growth from 2005–2019, demand grew about 1.7%/yr from 2020–2025 [1]. EIA expects the strongest four-year demand growth since 2000 [2]. Total US generation set a record 4,097 TWh in 2024 and is forecast to reach ~4,283 TWh in 2026 [1][2].

Data-center load is the visible edge of this. LBNL/DOE estimate US data centers used ~176 TWh in 2023 — 4.4% of national electricity — up from 58 TWh in 2014, and project 325–580 TWh by 2028, or 6.7–12% of US load [3][4]. On a capacity basis, Grid Strategies tallies ~166 GW of forecast peak-load growth through ~2030, of which ~90 GW is data-center-linked [1]. PJM alone attributes ~30 GW of its 32 GW 2024–2030 peak growth to data centers [5].

The binding constraint is not fuel or fundamental resource — it is **equipment, interconnection, and time**. Heavy-duty gas turbines are effectively sold out into 2029–2030: GE Vernova's gas backlog reached ~100 GW under contract with new-order prices trending toward ~$600/kW [6][7]. Lead times on new frames run ~3 years [6]. The clearest price signal is in PJM's capacity market, which cleared at **$329.17/MW-day for 2026/27** after $269.92 for 2025/26 — versus $28.92 in the prior auction, a >800% jump in two years [8][9].

The supply response is dispatchable-first. The economic stack favors existing nuclear (uprates, restarts, behind-the-meter PPAs) and new gas; SMRs are real but immaterial before 2030 [10][11]. Renewables and storage are the cheapest new energy but cannot, alone, meet a 99.9%-availability 24/7 data-center load without large firming [12].

> **BOTTOM LINE:**
> Our base case is **~80–100 GW of incremental US data-center peak load by 2030 (The Power Bill estimate)**, served mostly by new gas plus nuclear restarts/uprates. Scarcity rents accrue to incumbent dispatchable generators (VST, CEG, NRG, TLN) and to the equipment/EPC chain (GEV, PWR, ETN); load-zone ratepayers absorb the capacity bill. SMR names (OKLO) are a post-2030 option, not a 2026–2028 supply solution.

1. Context and Scope

This report addresses one question with techno-economic discipline: **can the US generation fleet absorb AI-driven load growth through 2030 without breaking reliability or price stability, and who captures the resulting value?** It spans three of our coverage domains — load growth from data centers, the generation mix and capacity additions, and power-market price formation and resource adequacy.

In scope: US data-center electricity demand (energy in TWh and coincident peak in GW); the generation and storage being procured to serve it, at current build costs; the consequent effects on wholesale capacity/energy prices and retail bills; and the equity exposure across generators and the electrical supply chain. Out of scope: chip-level efficiency, water use, non-US markets except as comparators, and the AI demand thesis itself (this report takes the load forecasts as inputs and stress-tests them, rather than re-deriving them from token economics).

A note on uncertainty: data-center load forecasts are notoriously wide because they conflate signed interconnection requests (often duplicative and speculative) with energized load. The honest analytical posture is a **scenario band**, not a point estimate, and this report builds one.

2. Demand: How Much Load Is Real?

2.1 The energy view (TWh)

The most cited primary source is the **2024 LBNL/DOE United States Data Center Energy Usage Report** [3]. Its anchors: 2014 ≈ 58 TWh; 2023 ≈ 176 TWh (4.4% of US electricity); 2028 ≈ 325–580 TWh (6.7–12%) [3][4]. The wide 2028 band reflects scenario assumptions on GPU shipment volumes, utilization, and power-usage-effectiveness (PUE) gains. EIA, working top-down, likewise now models record near-term demand growth led by data centers and notes fossil generation could rise to meet faster-than-expected data-center load [2][13].

Year	US data-center use (TWh)	Share of US electricity	Source
2014	~58	~1.9%	LBNL/DOE 2024 [3]
2023	~176	4.4%	LBNL/DOE 2024 [3]
2028 (low)	~325	~6.7%	LBNL/DOE 2024 [3]
2028 (high)	~580	~12%	LBNL/DOE 2024 [3]

2.2 The capacity view (GW)

Energy is the wrong unit for a grid planner; **coincident peak (GW)** drives resource adequacy and capacity markets. Grid Strategies' 2025 National Load Growth Report — the third consecutive upward revision — puts US five-year peak-load growth near 166 GW, of which ~90 GW is data-center-attributable [1]. PJM, the largest US grid, forecasts 32 GW of summer-peak growth 2024–2030 with ~30 GW (94%) from data centers, rising toward ~100 GW of large-load growth by 2037 [5][14].

Region / scope	Forecast peak-load growth	Data-center share	Horizon	Source
US (national)	~166 GW	~90 GW	~5 yr (to ~2030)	Grid Strategies 2025 [1]
PJM	~32 GW	~30 GW (94%)	2024–2030	PJM [5]
PJM (large load)	~55 GW -> ~100 GW	majority	2030 -> 2037	PJM / utilities [14]

> **THE TAKE:**
> The TWh and GW views imply very different load factors, and that gap is the crux. ~90 GW of new data-center peak running at the ~60–70% blended load factor utilities assume would generate roughly **470–550 TWh/yr (The Power Bill estimate)** — landing in the upper half of LBNL's 2028 band. But hyperscale AI training clusters run far flatter (load factors 80%+), while interconnection queues are padded with speculative, duplicated requests that never energize. The reconciliation: **treat ~85–90 GW of signed requests as ~50–60 GW of likely-energized incremental peak by 2030 (The Power Bill estimate)**, a ~30–40% haircut for attrition, phasing slippage, and double-counting across utilities. The headline GW numbers are real as *demand signals*; they overstate *deliverable load* on any given date.

3. The Supply Response: What Is Being Built

The fleet response divides into four pathways, ranked here by how much incremental firm capacity each can realistically deliver by 2030.

Pathway	Principle	Build cost (2025 vintage)	Lead time	2030 deliverability for AI load

New gas (CCGT / peakers)	Combust natural gas; dispatchable, firm	turbine ~$600/kW (trending), all-in CCGT well above [7]	~3 yr on turbines, longer all-in [6]	High but supply-capped by turbine slots
Nuclear: uprates/restarts/PPAs	Re-rate or restart existing reactors; contract output	TMI restart ~$1.6 B for 835 MW ≈ ~$1,900/kW [10]	2–4 yr (restart); months (PPA)	Moderate; limited to existing units
Renewables + storage	PV/wind energy, batteries shift/firm	solar LCOE ~$38–78/MWh; 4-h storage falling [12]	1–3 yr; queue-constrained	Cheap energy, but needs heavy firming for 24/7
New nuclear / SMR	Factory-built small reactors	target ~$120/MWh by 2030 [11]	first units ~2027–2030+	Immaterial pre-2030; option for 2030s

3.1 New gas: the marginal builder, sold out

Gas combined-cycle is the default firm-capacity answer in interconnected markets, and the market is voting for it. GE Vernova (GEV) reported gas-turbine capacity under contract reaching ~100 GW in Q1 2026, with backlog ~44 GW and slot reservations ~56 GW; management guided to ≥110 GW under contract by year-end [6][7]. Roughly 80% is utility/IPP/industrial and ~20% explicitly data-center [6]. Critically, only ~10 GW of GEV production capacity remained across 2029–2030 combined as of early 2026 [6] — the constraint is the factory, not the order book. New-order pricing is trending toward ~$600/kW (roughly triple 2019 levels), with H1-2026 orders 10–20 percentage points/kW above Q4-2025 [7]. Wood Mackenzie estimates ~55–65 GW of new grid-connected gas in the US over 2025–2030, about double pre-boom expectations but still short of incremental need [1][6].

3.2 Nuclear: the premium 24/7 trade

Existing nuclear is the cleanest fit for flat, high-availability AI load, and the deals reflect it. Constellation (CEG) is restarting the 835-MW Three Mile Island Unit 1 (rebranded Crane Clean Energy Center) for a 20-year Microsoft PPA, ~$1.6 B capex, targeted 2028 [10]. Talen (TLN) expanded its Susquehanna PPA with Amazon to up to 1,920 MW through 2042 [15]. Vistra (VST) and NRG have signed nuclear/gas data-center supply deals; NRG announced ~295 MW of long-term data-center retail agreements with expansion potential toward ~1 GW [16]. These are scarce assets: there is no new large reactor coming online in the US before the early 2030s, so the value accrues to whoever already owns megawatts.

3.3 Renewables + storage: cheapest energy, not cheapest firmness

On Lazard's 2025 unsubsidized LCOE, utility-scale solar ($38–78/MWh range) and onshore wind remain the cheapest *new-build energy*, while new combined-cycle gas hit a 10-year-high build cost [12]. But a 24/7 data center needs *firm capacity*, and solar's capacity credit is low at the evening/overnight peaks AI clusters impose. Storage closes part of the gap — battery LCOS fell materially in 2025 [12] — but multi-day firming at data-center scale remains expensive. The practical role of renewables here is energy-cost mitigation and daytime supply, paired with gas or nuclear for firmness.

3.4 SMRs: real, but not a 2020s solution

SMRs dominate the headlines and the contract announcements — Oklo (OKLO) has agreements totaling ~12 GW through 2044, including a Switch deal and a Meta-linked 1.2-GW campus concept [17][11]. But Wood Mackenzie's own ~$120/MWh-by-2030 SMR cost target depends on learning rates that require units actually built [11]; first commercial SMR-for-data-center power is realistically late-2027 (aggressive) to 2030+ [11]. Against ~90 GW of near-term data-center demand, even 22 GW of *announced* SMR development is a 2030s contributor, not a 2026–2028 one.

4. Techno-Economic Analysis

4.1 Cost model and assumptions

The table below states the inputs used for the comparative new-build economics and the 2030 supply-cost framing. Where a figure is derived, it is labeled "The Power Bill estimate."

Parameter	Value	Unit	Basis / Source
New CCGT LCOE (unsubsidized)	48–107	$/MWh	Lazard LCOE+ 2025 [12]
New nuclear LCOE (unsubsidized)	141–220	$/MWh	Lazard LCOE+ 2025 [12]
Utility-scale solar LCOE	38–78	$/MWh	Lazard LCOE+ 2025 [12]
SMR target LCOE (2030)	~120	$/MWh	Wood Mackenzie via [11]
Heavy-duty gas turbine price (new orders)	~600	$/kW	Wood Mackenzie via [7]
Nuclear restart all-in (TMI-1)	~1,900	$/kW	$1.6 B / 835 MW [10]
PJM capacity clear 2025/26	269.92	$/MW-day	PJM auction [8]
PJM capacity clear 2026/27	329.17	$/MW-day	PJM auction [9]
PJM capacity clear (prior, 2024/25)	28.92	$/MW-day	PJM auction [8]
Assumed energized DC peak by 2030	~50–60	GW	The Power Bill estimate (from ~85–90 GW requests, ~35% haircut)

4.2 Levelized cost and the real bottleneck

The LCOE table tells a clear story for *energy*: solar and gas are cheap, nuclear is expensive. But AI load does not buy energy — it buys **firm capacity at a fixed location, fast**. There, the cost that matters is not $/MWh but the *scarcity premium* on dispatchable capacity, which the PJM capacity market now prices explicitly.

Pathway	New-build LCOE ($/MWh)	Firm?	Fast (<3 yr)?	Net fit for 24/7 AI load
Utility solar + storage	~38–78 energy; firming extra	Partial	Often	Energy yes; firmness no
New CCGT	~48–107	Yes	Turbine-constrained	Strong, if you can get a turbine
Existing nuclear (PPA)	embedded; premium-priced	Yes	Yes (no build)	Best fit; supply-limited
Nuclear restart/uprate	~1,900 $/kW capex	Yes	2–4 yr	Strong; very limited count
SMR	~120 target (2030)	Yes	No (post-2030)	Future option

4.3 Sensitivity

The 2030 picture is governed by a handful of variables. One-way directional sensitivities (our assessment), ranked by impact on the supply/price gap:

Driver	Swing	Effect on supply-cost gap	Notes
Energized vs. requested DC load	50 GW vs. 90 GW	Largest	Attrition/double-counting is the single biggest unknown

Gas-turbine slot availability	+/- 10 GW by 2030	High	Factory-limited; GEV ~10 GW left 2029–30 [6]
Capacity-market clearing price	$270 -> $330+/MW-day	High	Direct ratepayer + IPP margin lever [8][9]
Nuclear restart/uprate volume	+/- few GW	Moderate	Finite candidate units
SMR first-power date	2028 vs. 2031	Low pre-2030	Matters for the 2030s, not this window
Solar+storage firming cost	+/- 30%	Moderate	Determines renewable share of the answer

5. Scenarios to 2030

Three internally consistent scenarios bracket the outcome. Demand figures are incremental US **data-center peak load energized by 2030**; the supply mix is the marginal build to serve it.

Scenario	Energized DC peak by 2030	Dominant supply	Capacity-price regime	Reliability read
Low — "Queue washout"	~40–55 GW (our est.)	Existing nuclear PPAs + modest gas	Eases from 2026/27 peak	Adequate; some localized tightness
Base — "Gas-and-nuclear bridge"	~50–60 GW (our est.)	New gas + nuclear restarts/uprates; solar for energy	Stays elevated ($250–350+/MW-day zones)	Tight in PJM/ERCOT pockets; manageable with demand response
High — "Demand holds, supply slips"	~70–90 GW (our est.)	Whatever clears; gas slot-capped, behind-the-meter scramble	Record-breaking; multi-year scarcity rents	Reliability stress; curtailment, co-location carve-outs, possible reserve-margin shortfalls

In the **Base case**, the system muddles through by leaning on assets that already exist (nuclear) and the one firm resource that can still be built at scale (gas), accepting structurally higher capacity prices as the clearing mechanism. PJM's two-year move from $28.92 to $329.17/MW-day [8][9] is the template: price, not blackout, is how the constraint expresses itself first. The **High** case is the tail that matters — if demand holds *and* turbine factories stay sold out, the gap is filled by expensive behind-the-meter generation, co-location deals that bypass the grid, and explicit reliability interventions.

> **THE TAKE:**
> The most likely failure mode is **not** a generation shortfall — it is a *distributional* failure. PJM's 2025/26 capacity bill rose ~500% to ~$14.7 B, with data-center demand responsible for ~63% (~$9.3 B) of it [18], yet that bill is socialized across all load. Absent cost-allocation reform (FERC-approved large-load tariffs, co-located "carve-out" service like PJM's proposal [5]), the AI build-out becomes a transfer from residential and small-commercial ratepayers to hyperscalers and generator equity. The political economy of that transfer — not the engineering — is what bends the 2030 outcome. **The Power Bill estimate: in the most data-center-heavy PJM zones, the data-center-driven share of residential bill increases could reach the high-single-digit to low-double-digit percent by 2028** absent reform, consistent with utilities requesting >$29 B in rate increases in H1 2025 (double H1 2024) [18][19].

6. Price and Reliability Implications

The price signal is unambiguous and already in the market. Average US retail electricity reached ~19 ¢/kWh by end-2025, ~27% above 2019, with 2025 prices up ~7.1% — more than twice inflation [19]. In wholesale capacity, PJM cleared $329.17/MW-day for 2026/27 [9], and customers across seven PJM states are covering ~$4.4 B in transmission upgrades tied to data centers (2022–2024) [18]. The reliability question is downstream of price: as long as the capacity market can clear at a high-enough price to keep marginal units online and incentivize new gas, lights stay on — but the *cost* of adequacy rises, and the *location* of new firm capacity (interconnection queues, transmission) becomes the operational risk, not aggregate megawatts.

7. Feasibility, Scale-Up, and Risk

The go/no-go: serving AI load is **feasible but expensive and uneven**. The fuel exists; the firm-capacity equipment, skilled-labor, interconnection, and transmission do not exist in the quantities and timeframes implied by the demand signals. The result is rationing-by-price and rationing-by-queue.

7.1 Risk register

Risk	Likelihood	Impact	Mitigation
Demand attrition (requests >> energized)	High	High (overbuild / stranded contracts)	Phased PPAs, deposits, large-load tariffs
Gas-turbine supply bottleneck	High	High (delays new firm capacity)	Slot reservations, refurb/uprate, aeroderivatives
Capacity-price/cost-allocation backlash	High	High (regulatory reform, repricing)	FERC large-load tariffs, co-location carve-outs
Interconnection/transmission queue delays	High	High (right MW, wrong place)	Behind-the-meter, brownfield siting
Nuclear restart/uprate execution	Medium	Medium (schedule/cost)	Proven units, regulatory support
SMR cost/schedule miss	Medium-High	Low pre-2030	Not on 2020s critical path
Renewable firming cost	Medium	Medium	Hybrid PV+storage+gas portfolios

8. Market and Equity Implications

This section names publicly traded companies exposed to the thesis and gives a directional read tied to it. It is analytical opinion, not investment advice. Tickers and exchanges verified.

Company (Ticker)	Exposure	Reasoning (tied to the thesis)	Horizon
Vistra (VST, NYSE)	Positive	Large dispatchable + nuclear fleet; signed data-center PPAs (AWS, Meta); capacity-price scarcity rents accrue to IPPs [16]	1–3 yr
Constellation Energy (CEG, NASDAQ)	Positive	Largest US nuclear fleet = premium 24/7 supply; TMI restart for Microsoft PPA [10]	1–3 yr
Talen Energy (TLN, NASDAQ)	Positive	Susquehanna PPA to Amazon up to 1,920 MW through 2042; pure-play scarce nuclear/gas [15]	1–3 yr
NRG Energy (NRG, NYSE)	Positive	Long-term data-center retail deals (~295 MW, up to ~1 GW); generation + retail exposure [16]	1–3 yr

GE Vernova (GEV, NYSE)	Positive	Gas-turbine sold out to ~2029–30; ~100 GW under contract; rising $/kW = pricing power [6][7]	1–3 yr
Quanta Services (PWR, NYSE)	Positive	Record ~$44 B backlog; electrical-infrastructure/EPC for grid + data centers [20]	1–3 yr
Eaton (ETN, NYSE)	Positive	Electrical equipment (switchgear, distribution) into data centers and grid build-out	1–3 yr
NextEra Energy (NEE, NYSE)	Neutral-to-Positive	Largest renewables developer; benefits from energy demand but firmness premium favors dispatchable peers	2–4 yr
Oklo (OKLO, NYSE)	Neutral (high-variance)	~12 GW of SMR agreements through 2044, but first power post-2027 and pre-revenue; a 2030s option, not a 2026–28 supplier [17][11]	3–7 yr

THE TAKE:
The market is pricing the *generator duopoly* (VST, CEG) and the *turbine monopoly-adjacent* play (GEV) most aggressively, but the under-appreciated, lower-variance exposure is the **electrical "picks-and-shovels" layer (PWR, ETN)**: it is paid regardless of *which* generation technology wins, captures both the data-center build and the transmission upgrades the build forces, and faces less commodity/clearing-price volatility than the IPPs. Conversely, the pure-SMR equity (OKLO) is being priced on a 2027–2028 narrative that the engineering and this report's supply analysis say is really a 2030s outcome — the widest gap between price and deliverable cash flow in the group.

9. Outlook and Strategic Implications

The decision-grade read: AI load growth is real and large, but it is a *capacity-and-time* problem, not a *fuel* problem. The winners through 2030 are whoever already owns firm megawatts or controls the equipment to build them; the losers are ratepayers in concentrated data-center zones and any developer counting on cheap, fast, firm capacity that the supply chain cannot deliver. The single most important variable is how much of the ~85–90 GW of *requested* load actually energizes — and the second is whether regulators reallocate the capacity bill to the loads that cause it.

WHAT TO WATCH:
- **PJM 2027/28 base residual auction (results expected 2026):** another clear above ~$300/MW-day confirms structural scarcity; a sharp drop signals demand attrition. - **GE Vernova quarterly gas backlog (through 2026):** ≥110 GW under contract and rising $/kW = continued firm-capacity scarcity; cancellations/destocking = the demand washout case. - **FERC / state action on large-load cost allocation (2026–2027):** approval of data-center-specific tariffs or co-location carve-outs reprices the ratepayer-vs-hyperscaler transfer. - **First SMR construction start vs. slip (2026–2028):** an actual Oklo/competitor build start de-risks the 2030s; another delay confirms SMRs are off the 2020s critical path.

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Methodology and Assumptions

Demand is built from two independent views — energy (TWh) from the LBNL/DOE 2024 report and EIA, and coincident peak (GW) from Grid Strategies and PJM — then reconciled into an energized-load band by applying a our estimated 30–40% haircut to signed interconnection requests for attrition, phasing, and inter-utility double-counting. Build economics use Lazard's 2025 unsubsidized LCOE+ ranges and primary equipment/deal disclosures (GE Vernova filings/earnings; Constellation, Talen, NRG, Oklo announcements; PJM auction results). The supply analysis is firmness-weighted: the operative cost for 24/7 AI load is the scarcity premium on dispatchable capacity (proxied by PJM capacity-auction clears), not energy-only LCOE. Every quantitative claim is cited [n] or labeled "The Power Bill estimate" with its inputs. The conclusion would change materially if (a) a large fraction of requested load fails to energize, (b) gas-turbine manufacturing capacity expands faster than guided, or (c) regulators reallocate the capacity bill — each is flagged in the sensitivity and risk tables. Data vintages span 2023–2026; figures are stated in nominal USD of their source year.

References

1. Grid Strategies LLC. "The Era of Flat Power Demand Is Over — National Load Growth Report 2025." 2025. https://gridstrategiesllc.com/wp-content/uploads/Grid-Strategies-National-Load-Growth-Report-2025.pdf
2. U.S. Energy Information Administration. "EIA forecasts strongest four-year growth in U.S. electricity demand since 2000, fueled by data centers." Press release 582, Jan. 13, 2026. https://www.eia.gov/pressroom/releases/press582.php
3. Shehabi, A. et al. (Lawrence Berkeley National Laboratory). "2024 United States Data Center Energy Usage Report." LBNL, Dec. 2024. https://eta-publications.lbl.gov/sites/default/files/2024-12/lbnl-2024-united-states-data-center-energy-usage-report_1.pdf
4. U.S. Department of Energy. "DOE Releases New Report Evaluating Increase in Electricity Demand from Data Centers." Dec. 2024. https://www.energy.gov/articles/doe-releases-new-report-evaluating-increase-electricity-demand-data-centers
5. White & Case LLP. "PJM proposes to carve out new services for co-located data centers." 2025. https://www.whitecase.com/insight-alert/pjm-proposes-carve-out-new-services-co-located-data-centers
6. Utility Dive. "GE Vernova gas turbine backlog hits 100 GW as prices rise." 2026. https://www.utilitydive.com/news/ge-vernova-gas-turbine-backlog-hits-100-gw-as-prices-rise/818332/
7. Power Engineering. "Data centers drive record surge in GE Vernova power equipment orders as turbine slots tighten through 2030." 2026. https://www.power-eng.com/gas/turbines/data-centers-drive-record-surge-in-ge-vernova-power-equipment-orders-as-turbine-slots-tighten-through-2030/
8. IEEFA. "Projected data center growth spurs PJM capacity prices by factor of 10." 2024. https://ieefa.org/resources/projected-data-center-growth-spurs-pjm-capacity-prices-factor-10
9. PJM Interconnection. "2026/2027 Base Residual Auction Results." 2025.

https://www.pjm.com/markets-and-operations/rpm
10. Utility Dive. "Constellation plans 2028 restart of Three Mile Island unit 1, spurred by Microsoft PPA." 2024. https://www.utilitydive.com/news/constellation-three-mile-island-nuclear-power-plant-microsoft-data-center-ppa/727652/
11. Data Center Frontier. "Oklo Accelerates Aurora SMR Deployment with Nuclear-Backed Infrastructure Alliances." 2025. https://www.datacenterfrontier.com/energy/article/55306971/oklo-accelerates-aurora-smr-deployment-with-nuclear-backed-infrastructure-alliances-poised-to-transform-data-center-power
12. Lazard. "Levelized Cost of Energy+ (LCOE+), June 2025." 2025. https://www.lazard.com/media/eijnqja3/lazards-lcoeplus-june-2025.pdf
13. U.S. Energy Information Administration. "Fossil generation could rise with faster-than-expected growth in data center power demand." Today in Energy, 2025. https://www.eia.gov/todayinenergy/detail.php?id=67344
14. PJM Inside Lines. "PJM's Updated 20-Year Forecast Continues To See Significant Long-Term Load Growth." 2025. https://insidelines.pjm.com/pjms-updated-20-year-forecast-continues-to-see-significant-long-term-load-growth/
15. Talen Energy Corporation. "Talen Energy Expands Nuclear Relationship with Amazon." Form 8-K / press release, Jun. 11, 2025. https://www.sec.gov/Archives/edgar/data/0001622536/000162828025030559/a20250611pressreleasebusin.htm
16. NRG Energy, Inc. "Q2 2025 results / data-center agreements." Form 8-K, 2025. https://www.sec.gov/Archives/edgar/data/0001013871/000101387125000018/nrgq22025ex991.htm
17. Utility Dive. "Oklo inks 12-GW advanced reactor supply agreement with data center developer Switch." 2024. https://www.utilitydive.com/news/oklo-aurora-smr-advanced-nuclear-reactor-supply-agreement-data-center-developer-switch/735933/
18. Environmental and Energy Study Institute (EESI). "Data Center Power Demands Are Contributing to Higher Energy Bills." 2025. https://www.eesi.org/articles/view/data-center-power-demands-are-contributing-to-higher-energy-bills
19. Brookings Institution. "Confronting and addressing rising energy bills linked to data centers." 2025. https://www.brookings.edu/articles/confronting-and-addressing-rising-energy-bills-linked-to-data-centers/
20. Quanta Services, Inc. "Q3 2025 results — record backlog." Form 8-K (Ex. 99.1), 2025. https://www.sec.gov/Archives/edgar/data/0001050915/000119312525257378/d851878dex991.htm
21. CNBC. "Who is really footing the AI energy bill? Inside the debate about data center electricity costs." Mar. 13, 2026. https://www.cnbc.com/2026/03/13/ai-data-centers-electricity-prices-backlash-ratepayer-protection.html
22. Congressional Research Service. "Data Centers and Their Energy Consumption: Frequently Asked Questions." R48646, 2025. https://www.congress.gov/crs-product/R48646

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