

The Signal

BY NOVA ONE

The Power Bottleneck

Mapping the money through the AI buildout, 2026 to 2035: who gets paid at each stage, and what changes if the financing runs thin.

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The three questions

- 1

How fast can America add power for AI, and where exactly is the bottleneck?
- 2

Who gets paid at each stage from 2026 to 2035, and whose position lasts?
- 3

What happens to the buildout, and to the companies being paid, if the money runs thin?

CONTENTS

The short version	4
I. Why power, and why now	5
II. Who gets paid, and when	8
III. The second bottleneck: money	11
IV. Ranking the map by durability	14
V. How the market has priced the map	16
VI. What would change our mind	17
Answering the three questions	17
Important information and sources	19

KEY EXHIBITS

1	The data center takes two years. The power takes up to five.	6
2	Who gets paid as AI's power crunch plays out, step by step	8
3	Three of the four biggest spenders now plan to spend more than their businesses bring in	12
4	Who gets paid, when, and how safely	14
5	A year of paying the toolmakers, then one day that sold everything but utilities	16

At a glance

The speed limit on artificial intelligence is how fast power can reach a building. Four numbers set the scene; the rest of this paper follows the money.

6,831 MW

PJM's latest capacity auction came up this far short of its reliability target, clearing at the price cap for a second straight year.

PJM, JULY 14, 2026

Over 5 years

Median wait for a new power plant to connect to the grid. A data center takes about two years to build.

BERKELEY LAB, MAY 2026

116 GW

Gas turbines under contract at GE Vernova, which says it is mostly sold out through 2030.

GE VERNOVA 8-K, JULY 22, 2026

\$725B to \$745B

2026 capital spending planned by the four largest spenders, up about 78%, now running at or above the cash three of them generate.

COMPANY GUIDANCE, JULY TO OCTOBER 2026

INSIDE THIS DEEP DIVE, YOU WILL LEARN

- Where the power bottleneck actually sits, from capacity auctions and grid hookups to turbines and transformers, and how long each piece lasts
- The order in which companies get paid, in four stages from 2026 to 2035
- How the five largest spenders are paying for the buildout, and what the telecom bust of 1999 to 2002 says about their suppliers
- Which businesses keep getting paid if money, rather than power, becomes the constraint
- The dated events through February 2027 that will show whether we are right

The short version

A data center can be designed, financed and filled with chips in about two years. A new power plant waiting to connect to the grid faces a median wait of more than five years (Lawrence Berkeley National Laboratory, May 2026). That gap sets the speed limit on the artificial intelligence buildout: it can move only as fast as the United States can deliver electricity to a building. Every company that shrinks the gap, owns a scarce piece of it, or gets more work out of each unit of power sits in the path of the spending.

The short answers to our three questions, in order:

1. **The shortage is about time more than energy.** The country is not running out of electricity in any absolute sense. It is running out of the ability to add firm capacity, wires and hookups on the schedule the buildout wants. That is why the first companies to get paid are the ones that sell time: turbines, engines and fuel cells that skip the queue, transformers and switchgear, and the crews who install all of it.
2. **The money moves in a sequence.** Equipment and construction get paid first (2026 to 2028), then the gas that feeds on-site plants and the utilities that bill the new load (2026 to 2029), then firm power and the chips that squeeze more work from each watt (2027 to 2031), and finally new reactors, power-rich land and anyone who owns a grid connection (2030 and beyond).
3. **There is now a second bottleneck, and it is money.** By our arithmetic, Amazon, Alphabet and Meta are each guiding 2026 capital spending at or above their trailing operating cash flow, and they are paying the difference with debt, new stock and off-balance-sheet structures. On October 22 the market reacted: power and chip stocks fell between 4% and 11% in a session (GE Vernova -10.6%, AMD -8.1%, Nvidia -4.4%) while the equal-weighted S&P 500 finished +0.7%. If capital, rather than electricity, becomes the binding constraint, the order of who gets paid stays roughly the same, but the size of the checks changes, and companies whose revenue is contracted or regulated keep collecting while those selling into short order books do not.

Our view: through 2028, the right to connect a large load and the equipment to generate power for it are the scarcest inputs in the buildout, and the auctions and contracts below support that. Past 2028 the case is a forecast. Turbine output is scheduled to rise by half by 2030, chips are getting more work from each watt, and grid operators are trimming load forecasts once they check them. We think power still binds in 2030, and Section VI lists what would show us we are wrong. The businesses that hold up under either constraint sell something the buildout cannot skip, on terms that do not depend on next year's capital budget.

I. Why power, and why now

The demand, as a range

Forecasts of how much electricity American data centers will use have moved one direction for two years: up.

FORECASTER (DATE)	DATA-CENTER USE BY 2030	LATER
Lawrence Berkeley National Lab (June 2026)	649 TWh, 11.8% of US electricity (range 521 to 843 TWh)	
EPRI (February 2026)	9% to 17% of US electricity, 56 to 132 GW of IT capacity	Up from 4.6% to 9.1% in its 2024 study
BloombergNEF (July 2026)	118 GW installed, revised up 52%	194 GW by 2035, up from 106 GW in December 2025
Utility filings (Grid Strategies, November 2025)	About 90 GW of data centers	Versus about 65 GW in analyst benchmarks

For scale, data centers used about 4.4% of US electricity in 2023 (LBNL). The 2030 estimates span roughly a factor of two, and the honest read is that nobody knows the number within a wide band. What matters for investors is the direction of revision. The national forecasters keep raising their numbers, while the grid operators, who have to plan around real commitments, have started to trim theirs. PJM cut its 2028 summer peak forecast by 4,414 MW in January after vetting which large loads were real, and now requires firm commitments before counting them. Grid Strategies estimates utility filings overstate 2030 data-center load by about 25 GW.

Both can be true at once. The total may land well below the most aggressive filings and still strain the system, because the system cannot add capacity quickly even at the lower number.

Where the bottleneck actually is

The cleanest evidence that power is binding comes from the places where electricity is bought and sold years ahead.

PJM, the largest US grid, runs an annual auction for capacity, the promise that a power plant will be available on the hottest day three years out. Its last two auctions both cleared at the price cap and both came up short of the reliability target: 6,623 MW short for 2027/28 and 6,831 MW short for 2028/29, leaving a reserve margin of 14.7% against a 20% target. Only 525 MW of new generation and uprates cleared in the 2028/29 auction. Data centers accounted for 5,100 MW of the 5,250 MW increase in forecast peak behind the 2027/28 result. The next auction posts its results on December 22, 2026, with a cap of \$337.83 per MW-day.

ERCOT, the Texas grid, has received about 474 GW of large-load connection requests, roughly 90% of them data centers. The Texas all-time peak is 85,508 MW. As of September, 9,456 MW had approval to energize, and 4,132 MW, or 44% of that, was drawing power. Approvals are running ahead

of use, which tells you the hookup is not the only thing slowing projects in Texas. In September the governor directed the state environmental agency to pause data-center permits pending an ERCOT review that the grid operator aims to file around December 10.

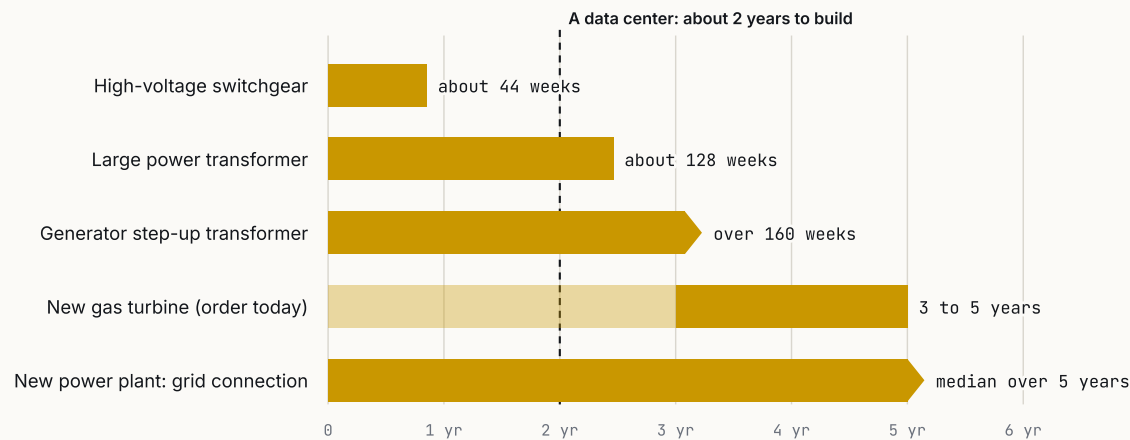
The physical constraints behind those numbers, with their lead times:

CONSTRAINT	LATEST DATED FIGURE	LEAD TIME
Firm capacity (PJM)	Two straight auctions short, at the cap	Binding now, through 2029/30
Large-load approval (ERCOT)	474 GW requested, 9.5 GW approved, 4.1 GW running	Binding now
Gas turbines	GE Vernova mostly sold out through 2030 and contracting 2031 slots; Siemens Energy backlog about 69 GW; Mitsubishi Heavy about 35 GW	3 to 5 years
Interconnection queue (generation and storage)	2,061 GW waiting; 13% of 2000-2020 requests reached operation; median wait over 5 years (LBNL, May 2026)	5+ years
Transformers	Generator step-up units over 160 weeks (Q1 2026); power transformers about 128 weeks; about 80% imported; a projected 30% supply deficit (Wood Mackenzie)	2.5 to 3+ years
High-voltage switchgear	About 44 weeks (Wood Mackenzie)	About 1 year
Permitting	Texas paused data-center environmental permits on September 21, 2026	Open-ended

EXHIBIT 1

The data center takes two years. The power takes up to five.

Lead times for the equipment and approvals a new data center's power depends on.



Sources: Wood Mackenzie (switchgear and transformer surveys, 2025 to Q1 2026); GE Vernova, Siemens Energy and Mitsubishi Heavy (2026); Lawrence Berkeley National Laboratory, Queued Up (May 2026). The two-year data-center build time is an industry rule of thumb.

The order in which these bind tells you the order of payment. Through 2028, accredited capacity and the right to connect a large load are the scarcest things in the system, with transformers pinching at the substation level. From 2028 to 2031, turbine slots are the scarce input for new firm generation. After 2030, long-distance transmission and the generator interconnection queue become the long pole, because nothing else takes as long to build or permit.

The case against

Four facts argue the bottleneck is smaller, or shorter-lived, than it looks.

- **Efficiency.** Nvidia says its Vera Rubin platform delivers up to 10 times more tokens per megawatt than the prior generation (GB200), a figure CoreWeave reproduced on one model. If useful output per watt rises that fast, the same power supports far more AI.
- **Inflated pipelines.** The 474 GW in the ERCOT queue is more than five times the Texas all-time peak, and much of it will never be built. Developers file in many places for the same project.
- **The bypass.** On-site gas plants skip the grid queue entirely. They trade a five-year wait for a two-to-three-year equipment wait, and that wait shortens as turbine and engine makers expand. Much of the Stage 1 spending below is exactly this bypass.
- **The fuel is cheap.** Natural gas at Henry Hub was \$3.10 on October 20, 2026. The scarcity is in the machines that burn it and the wires that carry the result.

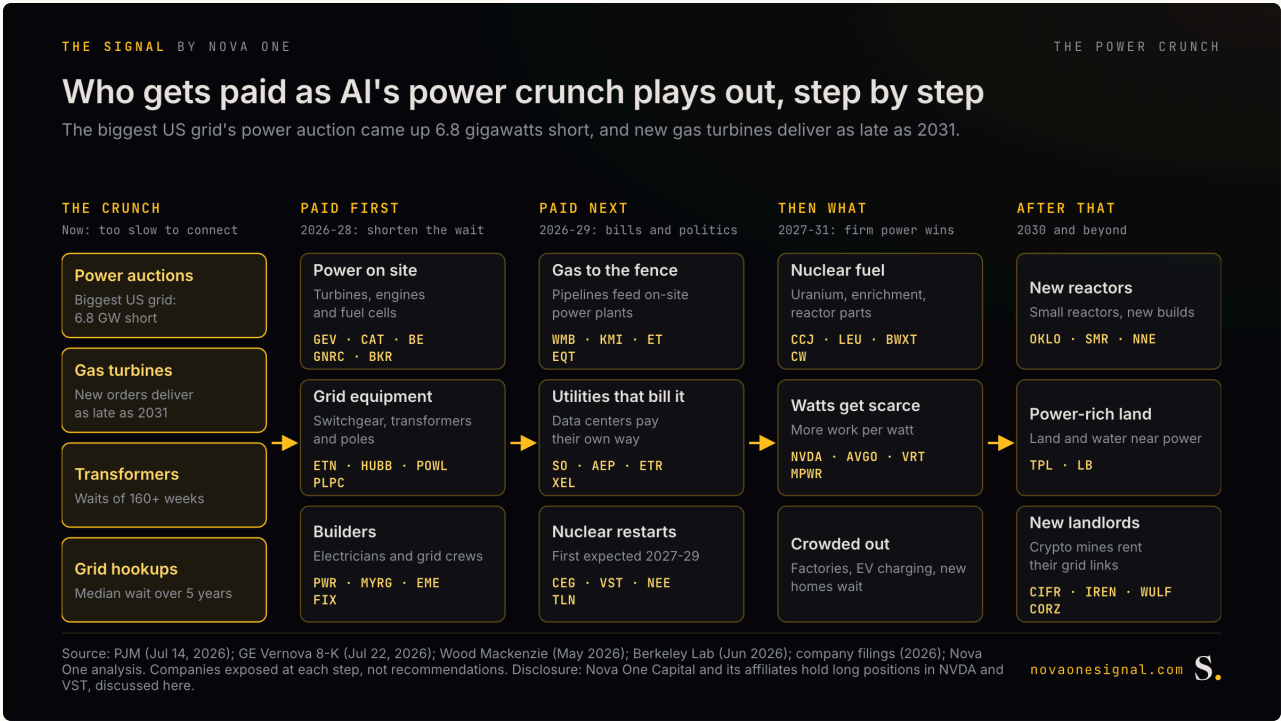
Our view, which we cannot yet prove for this cycle, is that cheaper output per watt will be spent on more usage rather than banked. Together, though, these make 2030 less certain than 2027, and they are why we treat the later stages of the map as a forecast.

II. Who gets paid, and when

EXHIBIT 2

Who gets paid as AI's power crunch plays out, step by step

The map: the constraint, then the companies exposed at each stage, with the years each stage pays.



Sources: PJM (Jul 14, 2026); GE Vernova 8-K (Jul 22, 2026); Wood Mackenzie (May 2026); Berkeley Lab (Jun 2026); company filings (2026); Nova One analysis. Companies exposed at each step, not recommendations.

The sequence follows the physics. Whoever removes the most binding constraint at a given moment collects the premium for it, and as each constraint loosens, the premium moves down the chain.

Stage 1, 2026 to 2028: sellers of time

When the grid cannot connect a data center for years, the buyer pays up to bring power to the site, buy equipment before anyone else, and hire the crews to install it.

On-site power. GE Vernova is the clearest case. It held 116 GW of gas turbines under contract at the end of the second quarter: 53 GW of firm orders and 63 GW, or 54%, of paid slot reservations that have not yet become orders. It targets at least 125 GW by year-end, which management says leaves it "mostly sold out through '30." Its total backlog was \$176 billion. Two details matter for the capital question later. Management says only about 20% of the turbine gigawatts under contract are for data centers; the other 80% is utilities and industry. And customers pay down payments to reserve slots, which helped lift contract liabilities to \$39.9 billion. GE Vernova plans to raise turbine output from 20 GW a year to 24 GW in 2028 and 30 GW in 2030.

Caterpillar's backlog reached \$72.1 billion in the second quarter, with sales of power-generation equipment to end users up 72%, driven by large generator sets and turbines for data centers; lead times for gas engines run into late 2028. Baker Hughes's industrial and energy technology order book stood at a record \$37.1 billion, including a 1.3 GW mobile-power order whose uses span data centers and oil and gas. Bloom Energy reported third-quarter revenue up 138% on October 22. Generac carries about \$1.6 billion of data-center backlog and signed an agreement with Amazon in September for about \$2.4 billion of deliveries in 2027 and 2028.

Grid equipment. Eaton's twelve-month rolling orders in its Americas electrical business were up 41% organically in the second quarter. Powell Industries booked a single data-center order of more than \$400 million and ended June with a record \$2.4 billion backlog, up 69%. Hubbell describes utility transmission and distribution spending as being in the "early stages of a multi-year investment cycle."

The builders. Every one of these machines needs installing. Quanta Services ended the second quarter with \$53.4 billion of backlog, up 49%. EMCOR's remaining performance obligations reached \$17.1 billion, up 44%. Comfort Systems reported a backlog of \$17.8 billion on October 22, up from \$9.4 billion a year earlier, with technology customers making up 58% of its first-half revenue.

Stage 2, 2026 to 2029: the fuel, the bill and the plants that already exist

Gas to the fence. On-site gas plants need gas delivered. Kinder Morgan reported a record \$14.4 billion project backlog on October 21, more than 75% of it supporting power generation and local gas distribution, including a Permian pipeline serving new generation "for an A-rated hyperscaler." Kinder describes the backlog as "primarily take-or-pay." Williams is building dedicated gas-fired plants for data centers under ten-year, primarily fixed-price agreements with an investment-grade customer, and brought in Blackstone-led partners for 49% of five projects. Energy Transfer agreed to supply about 900 million cubic feet a day to three Oracle data centers and signed a 20-year firm transport agreement with Entergy Louisiana for the plants serving Meta's Richland Parish campus.

Utilities that bill the new load. Utilities in states with large-load tariffs can make data centers pay for the cost of serving them. Twenty-five states have approved such tariffs and eight more are pending (Edison Electric Institute, October 9, 2026). Southern Company has more than 17 GW of large load under contract through the mid-2030s, including a 25-year, 3.2 GW agreement with OpenAI near Savannah, with minimum bills covering at least 100% of the incremental cost to serve and about \$21 billion of collateral posted. AEP reports 69 GW of contracted additions through 2030 and a \$78 billion capital plan; its Ohio tariff requires loads over 25 MW to pay for at least 85% of contracted demand for 12 years. Entergy is building gas plants for Meta's Louisiana campus, with a state commission vote on the second phase due November 18.

The politics cut both ways. Federal regulators on October 9 rejected parts of PJM's package for handling large new loads, including a framework for data centers to bring their own capacity (FERC docket ER26-3515), and household bills are now a campaign issue in several states. Protection for utilities depends on regulators continuing to make the new customers pay.

Plants that already exist. The fastest new supply is an existing nuclear plant running longer, harder or again. Hyperscalers have signed long contracts for exactly that.

PLANT OWNER	BUYER	SIZE AND TERM
Constellation	Microsoft (Crane restart)	20 years; company targets 2027, while a PJM analysis implied grid connection in 2031
Constellation	Meta (Clinton)	1,121 MW plus a 30 MW uprate, 20 years, from June 2027
Constellation	Amazon (Calvert Cliffs)	690 MW, 20 years, including a 190 MW uprate online 2030 to 2032
Constellation	Google	890 MW of uprates across 11 PJM units by 2032, plus 2,700 MW from the existing fleet over 15 years
Vistra	Amazon (Comanche Peak)	1,200 MW, 20 years, starting in the fourth quarter of 2027
Vistra	Meta (Perry, Davis-Besse, uprates)	2,609 MW, 20 years, full by 2034
Talen	Amazon (Susquehanna)	Up to 1,920 MW through 2042
NextEra	Google (Duane Arnold restart)	About 615 MW, 25 years, back by 2029 with a \$1.9 billion DOE loan

Prices on these contracts are not disclosed, and the restart timelines are less certain than the contracts. Palisades, which was supposed to be the first American plant to restart, was delayed indefinitely after a fuel assembly got stuck in the reactor vessel in August.

Stage 3, 2027 to 2031: firm power and more work per watt

Nuclear fuel and parts. Every uprate, restart and new reactor needs fuel and components. Cameco has average deliveries of more than 28 million pounds of uranium a year contracted over the next five years. BWX Technologies has an \$8.4 billion backlog, about 81% of it government work. Curtiss-Wright, whose backlog is \$4.5 billion and about 70% defense, is waiting on a reactor coolant pump order for new Westinghouse AP1000 reactors. Centrus has a \$4.5 billion backlog, but about \$3.0 billion of it depends on building new enrichment capacity.

Performance per watt. When megawatts are the scarce input, chips and systems that get more work from each one capture more of the spending. Nvidia's data-center business was 92.5% of its revenue in its most recent quarter, and the company says supply will be a bottleneck "at least through the end of fiscal year 2028." Broadcom's AI semiconductor revenue rose 221% to \$16.7 billion in its latest quarter. Vertiv, which sells the cooling and power systems inside the data hall, roughly doubled its customer prepayments to \$3.6 billion in the first half. This is also the stage most directly tied to the capital budget, which matters in Section IV.

Stage 4, 2030 and beyond: new reactors, land and hookups

New reactors are the long-dated part of the map. Ontario Power Generation targets grid connection for the first BWRX-300 small reactor by the end of 2030. TVA received the first US construction permit for the same design on September 29, 2026, with no operating date set. TerraPower targets 2030.

Among the public small-reactor developers, the binding money is thin: Oklo holds about \$3.0 billion of cash and a prepayment agreement with Meta for a 1.2 GW campus, with its other customer arrangements non-binding, and NuScale has no signed power purchase agreement for its largest opportunity.

Power-rich land and **grid connections** become valuable because they cannot be manufactured. Texas Pacific Land supplies land and water for a Chevron power plant serving a data center. Former bitcoin miners have become landlords of their grid hookups: Cipher reports about \$11.4 billion of contracted lease revenue across three hyperscale leases, including a 15-year, \$5.5 billion lease to Amazon, and TeraWulf's Fluidstack leases carry \$3.7 billion of contracted revenue with a \$1.8 billion Google backstop, alongside a 20-year lease with Anthropic worth about \$19 billion. IREN's five-year, \$9.7 billion Microsoft contract is a different animal: IREN buys the GPUs itself, so it is closer to a GPU cloud contract, with the depreciation risk that comes with it.

III. The second bottleneck: money

The spending has outrun the cash

The four largest US spenders guided to about \$725 to \$745 billion of capital spending for 2026, up roughly 78% from about \$413 billion in 2025. Adding Oracle's fiscal 2027 plan brings the total to about \$815 to \$840 billion.

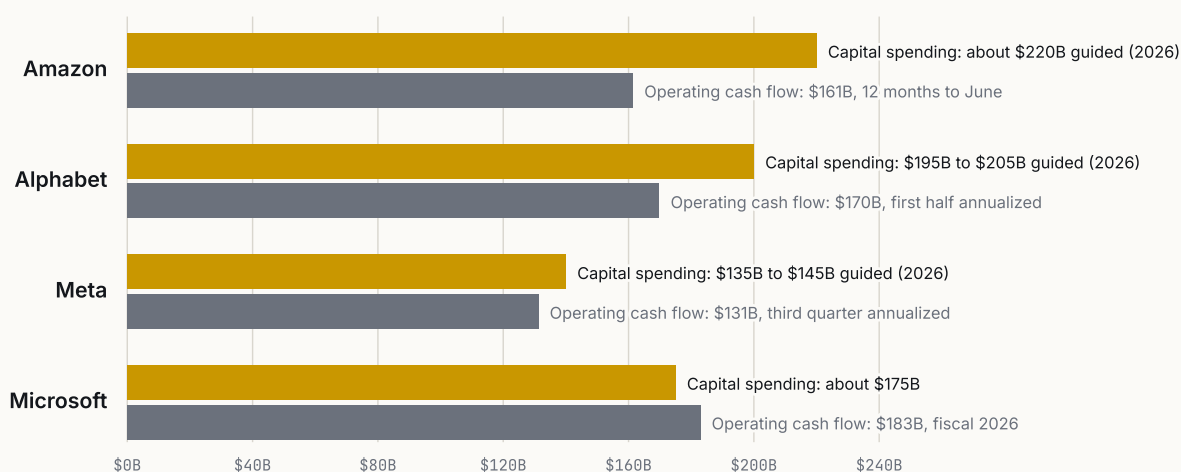
COMPANY	2026 CAPITAL SPENDING	OPERATING CASH FLOW (LATEST)	CASH AFTER CAPEX	WHAT CHANGED IN FUNDING
Amazon	About \$220B guided	\$161.4B, 12 months to June	-\$7.6B, 12 months to June	No buyback program
Alphabet	\$195B to \$205B guided	\$84.9B, first half	-\$5.9B, second quarter	First half: \$30.5B of common stock, \$19.1B of mandatory convertible preferred and \$56.2B of debt raised; no buybacks
Meta	\$135B to \$145B guided	\$32.8B, third quarter	-\$2.1B in the third quarter, after +\$0.8B in the second	No buybacks in the second or third quarter; long-term debt \$80.9B, up from \$58.7B at year-end; plans a non-voting share class explicitly to raise equity
Microsoft	About \$175B (fiscal and calendar definitions differ)	\$182.9B, fiscal 2026	About +\$67B, fiscal 2026	AAA rated; still buying back stock
Oracle	\$90B to \$95B planned for fiscal 2027	\$23.1B, latest quarter (half from customer prepayments)	About -\$28.7B, trailing 12 months	Cut to BBB- by S&P in July; sold \$20B of stock; credit default swaps at a record 288 basis points on October 15

Sources: company 8-K and 10-Q filings and earnings releases, July to October 2026, including Meta's third-quarter release and information statement of October 21; S&P Global; S&P Global Market Intelligence. Cash-flow periods differ by company and are labeled.

EXHIBIT 3

Three of the four biggest spenders now plan to spend more than their businesses bring in

2026 capital spending plans against operating cash flow, in billions of dollars.



Sources: company 8-K and 10-Q filings and earnings materials, July to October 2026. Annualized figures are Nova One's arithmetic (first half x2; third quarter x4). Capital spending is guidance; periods and definitions differ by company. Microsoft's figure mixes fiscal and calendar definitions.

Microsoft is the only one of the five still comfortably funding the buildout from its own cash. The rest are borrowing, issuing stock or moving assets off their balance sheets. Meta's Hyperion campus in Louisiana sits in a joint venture financed with \$27 billion of bonds. Hyperscalers and related entities issued about \$225 billion of bonds by mid-2026, and S&P projects \$400 billion for the full year. Moody's counts about \$1.2 trillion of off-balance-sheet lease obligations across the group. Morgan Stanley estimated in July 2025 that data-center spending through 2028 would need about \$1.5 trillion of outside financing.

The stress shows first at the edges. CoreWeave's 2031 bonds yielded about 15.6% in the week of October 19, and its stock is -57% from its June high. Gartner estimated on October 14 that more than \$3.5 trillion of AI infrastructure spending could face impairment by 2030 and that more than 80% of the newer GPU cloud providers will cease independent operation by then.

Demand: strong where we can measure it, concentrated, and partly financed

- One-year rental contracts for Nvidia H100 GPUs rose about 40%, from \$1.70 an hour in October 2025 to \$2.35 in March 2026 (SemiAnalysis). That is the latest reading we have, and it predates the credit stress above.
- Cloud backlogs keep growing: Google Cloud's reached \$514 billion, AWS's \$496 billion, and Microsoft's commercial remaining performance obligations \$678 billion. Microsoft's grew 84% in

total but 25% excluding OpenAI. OpenAI funds its commitments with outside capital, so part of this backlog is demand that itself depends on financing.

- The sellers say demand exceeds supply. Amazon's chief executive expects capacity to stay short through 2026 and 2027. Nvidia's chief executive said on October 22 that neocloud demand is "off the charts" and that "there's a scarcity of capital."

Rising rental prices alongside widening credit spreads fit a market where financing binds before appetite. They also fit the early stage of a slowdown that starts with the weakest, most indebted buyers, which is where the stress is showing. The data does not yet tell the two apart, and the next readings on rental prices and neocloud credit will.

What history says happens to suppliers

The closest precedent is the telecom buildout of 1999 to 2002. Andrew Odlyzko showed that internet traffic kept roughly doubling every year through the crash; the problem was that business plans had assumed growth far faster than that, so capacity was built for traffic that arrived years later than promised. Equipment makers that had lent to their own customers fell hardest. The fiber laid in that period was used for decades. The equity of many of the companies that sold it was not.

There is a disanalogy that cuts against the power thesis, and it deserves a plain statement. The fiber glut became permanent partly because new technology multiplied the capacity of every strand already in the ground. The equivalent today is the chip that does ten times the work per megawatt. If efficiency outruns usage, the same thing could happen to the power buildout's later stages. One difference runs the other way: in 2001 suppliers financed their customers, while today GE Vernova holds \$39.9 billion of its customers' money as deposits.

The lesson is that durable assets do not guarantee durable supplier revenue. What protected investors in that era, and what protects them now, is how the revenue is secured.

Three paths for 2026 to 2030

PATH	WHAT HAPPENS TO CAPEX	WHO KEEPS GETTING PAID	WHO GETS HURT FIRST
Base: power binds	Keeps rising through 2027, financed with more debt and equity	The whole map, in the order above	No one group in particular
Slowdown: capital binds	Flat in 2027 and 2028 as financing tightens	Utilities with minimum bills and collateral; take-or-pay pipelines; signed 15 to 25 year power contracts at running plants; turbine makers with paid reservations and non-AI customers	Short-backlog equipment sellers with concentrated customers; unhedged generation; landlords and GPU clouds that build ahead of rent
Bust: credit event	Cut sharply after a lender or large tenant fails	Regulated rate base, with political risk; fuel and naval nuclear work funded by government	Anyone whose revenue depends on next year's orders, and the equity of the most indebted builders

In every path, some of the shortage of firm power and grid capacity persists, because the grid also has to serve electrification, reshoring and ordinary growth; the Energy Information Administration expects industrial electricity demand to grow about 2.7% in 2027. What changes from path to path is how much of the AI premium the suppliers keep.

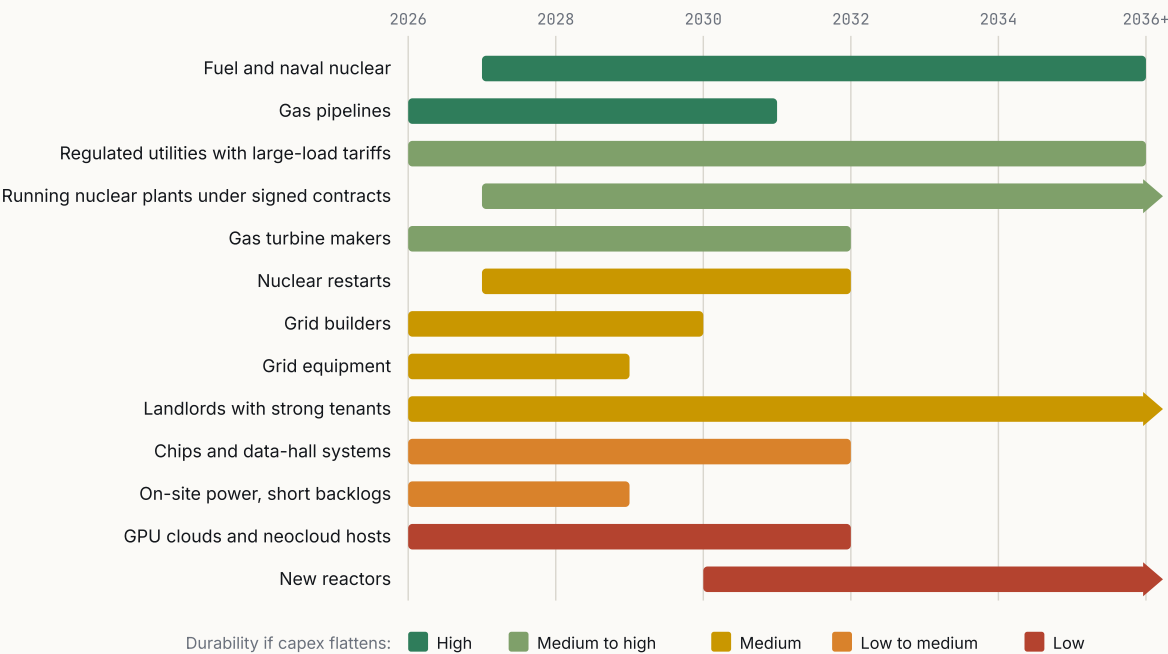
IV. Ranking the map by durability

Combining when each group gets paid with how secure that payment is if capital tightens gives a more useful picture than either alone.

EXHIBIT 4

Who gets paid, when, and how safely

Each bar spans the years a group is paid in the map; the color is how secure that revenue is if hyperscaler capital spending flattens.



Nova One analysis of company filings, contracts and tariffs (July to October 2026). Durability ratings are judgments, explained in the table below.

GROUP	WHEN PAID	HOW IT GETS PAID	DURABILITY IF CAPEX FLATTENS	WHY
Fuel and naval nuclear (BWX Technologies, Curtiss-Wright, Cameco)	2027 to 2035	Government contracts and long-term utility contracts	High	Little dependence on AI capex; new-build optionality is the AI-sensitive part
Gas pipelines (Kinder Morgan, Williams, Energy Transfer)	2026 to 2030	Take-or-pay and fixed-price contracts	High	Contracted cash flows; large non-AI business in LNG and utilities
Regulated utilities with large-load tariffs (Southern, AEP)	2026 to 2035	Rate base plus minimum bills	Medium to high	Data centers pay at least 85% to 100% of committed cost for 12 to 25 years, with collateral; the risk is regulators and household-bill politics
Running nuclear plants under signed contracts (Constellation, Vistra, NextEra)	2027 to 2045	15 to 25 year power purchase agreements	Medium to high	Investment-grade buyers on long contracts; unhedged output is the weak spot
Nuclear restarts (Crane, Duane Arnold, Palisades)	2027 to 2031	Contracts that start when the plant does	Medium	The contracts are signed; the dates have already slipped once
Gas turbine makers (GE Vernova, Siemens Energy)	2026 to 2031	Firm orders plus paid reservations	Medium to high	Deposits and about 80% non-data-center demand; 54% of GE Vernova's turbine book is reservations that still have to convert
Grid builders (Quanta, MYR, EMCOR, Comfort Systems)	2026 to 2029	Backlog, master service agreements	Medium	18 to 24 months of backlog; fixed-price data-center work goes first, utility work holds
Grid equipment (Eaton, Hubbell, Powell)	2026 to 2028	Product orders	Medium	Utility replacement demand is sticky; data-center orders are not
Landlords with investment-grade or backstopped tenants (Cipher, TeraWulf)	2026 to 2046	Long leases	Medium	Long contracts and credit support, but they build ahead of rent with heavy debt
Chips and data-hall systems (Nvidia, Broadcom, Vertiv)	2026 to 2031	Product orders, some prepayments	Low to medium	Strongest demand today, and the closest to the capex line itself
On-site power with short backlogs (Bloom, Generac)	2026 to 2028	Product orders, few customers	Low to medium	Visible backlog under a year at Bloom; two customers were 69% of its third-quarter revenue
GPU clouds and neocloud-dependent hosts	2026 to 2031	Contracts plus owned hardware	Low	Tenants and owners are where Gartner expects consolidation; hardware depreciates
New reactors (Oklo, NuScale, Nano Nuclear)	2030 and beyond	Mostly non-binding agreements	Low	Pre-revenue; funded by their balance sheets

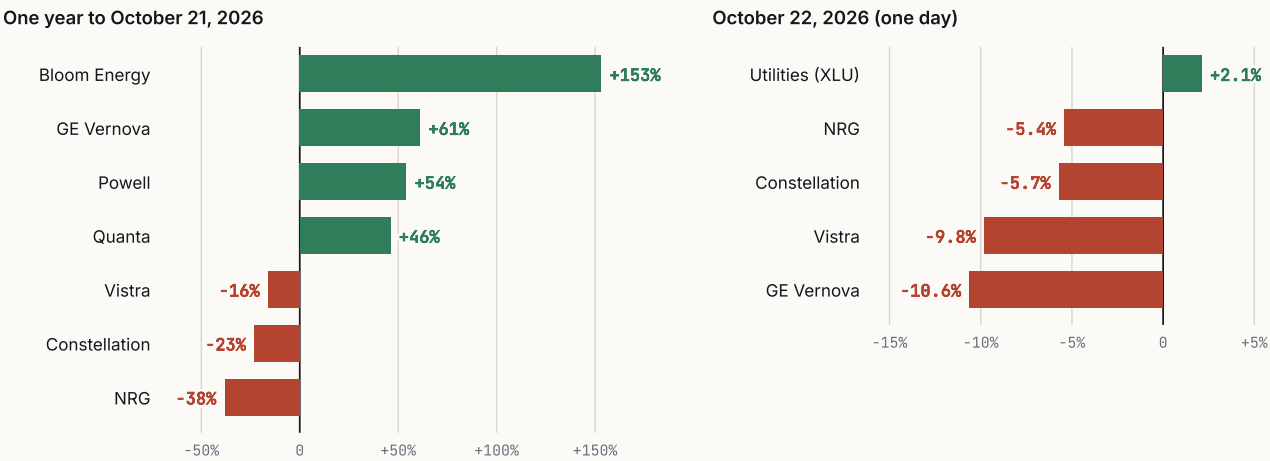
The read across that table is the core of the thesis. When power is the constraint, sellers of time collect a premium. When capital is the constraint, sellers of certainty keep collecting. The businesses that hold up in both are the ones that do both: assets the buildout cannot skip, paid for under contracts or regulation that do not depend on next year's budget.

V. How the market has priced the map

EXHIBIT 5

A year of paying the toolmakers, then one day that sold everything but utilities

Share-price change, percent. Left: daily closes October 22, 2025 to October 21, 2026. Right: the session of October 22, 2026.



Source: Yahoo Finance daily closes; Nova One's calculation. Utilities = Utilities Select Sector SPDR (XLU). One-year returns depend on the start date.

Over the year to October 21 (daily closes, October 22, 2025 to October 21, 2026), the market rewarded companies selling equipment and services into the buildout and marked down independent power producers: Bloom Energy +153%, GE Vernova +61%, Powell +54% and Quanta +46%, against NRG -38%, Constellation -23% and Vistra -16%. One-year returns depend heavily on the start date and do not show why prices moved. Household-bill politics is one explanation, not the only one.

On October 22, GE Vernova, the best performer of the four over the year, had the worst day: GE Vernova -10.6%, Vistra -9.8%, Constellation -5.7% and NRG -5.4%, while utilities finished +2.1%. One session does not make a trend. It does show investors moving toward regulated revenue when financing worries rise, which is the distinction the durability ranking draws. We will revisit these figures after the October 28 and 29 reports.

VI. What would change our mind

WHEN	WHAT REPORTS	WHAT IT TESTS
October 28, 2026	GE Vernova third quarter	Do reservations keep converting to orders; does the turbine book reach 125 GW
Late October (dates per company announcements)	Microsoft, Alphabet and Amazon third quarter	2026 capex, the first view of 2027, and how the spending is financed
November 18	Louisiana commission vote on Entergy's second Meta phase	Whether regulators keep approving new generation for single customers
December 10 (target)	ERCOT large-load review	How much of the 474 GW is real
December 22	PJM 2029/30 capacity auction results	Clears at the cap again? How short?
Late January to February 2027	Hyperscaler 2027 capex guidance	Whether capital or power binds next
February 28, 2027	FERC suspension of PJM's backstop procurement lifts	New supply response

Signs the thesis is working: PJM clears at the cap again with a shortfall of 6 GW or more; turbine reservations convert to firm orders; 2027 capex is guided up with financing in place; GPU rental prices hold.

Signs it is breaking: grid operators cut load forecasts by 10% or more after vetting; the ERCOT review shrinks the queue sharply; a hyperscaler cuts capex; credit spreads keep widening while GPU rental prices fall, which would mean demand, and not only financing, is weakening.

Answering the three questions

1. How fast can America add power for AI, and where exactly is the bottleneck?

Not as fast as the buildout wants, and the shortage is time more than energy. A data center takes about two years; a new power plant waits more than five to connect. Through 2028 the scarcest inputs are accredited capacity and the right to connect a large load, with transformers pinching at the substation: PJM has cleared at the price cap and short of its reliability target in two straight auctions. From 2028 to 2031 turbine slots bind, and after 2030 long-distance transmission and the interconnection queue become the long pole. Through 2028 that rests on auctions, order books and contracts; past 2028 it is our forecast, and Section VI lists what would change it.

2. Who gets paid at each stage from 2026 to 2035, and whose position lasts?

Sellers of time get paid first: on-site power, grid equipment and the crews who install it (2026 to 2028). Next come the gas to the fence, the utilities that bill the new load and the plants that already exist (2026 to 2029); then nuclear fuel and the chips that do more work per watt (2027 to 2031); then

new reactors, power-rich land and grid connections (2030 and beyond). The positions that last are the ones paid under contracts or regulation. Fuel and naval nuclear and take-or-pay pipelines rank highest on durability, followed by utilities with large-load tariffs, running nuclear plants under signed 15 to 25 year contracts and turbine makers holding paid reservations. GPU clouds and new reactors rank lowest, with chips and short-backlog on-site power just above them.

3. What happens to the buildout, and to the companies being paid, if the money runs thin?

The order of who gets paid stays roughly the same, but the size of the checks changes. Amazon, Alphabet and Meta are guiding 2026 spending at or above the cash their businesses generate and funding the gap with debt, new stock and off-balance-sheet structures; Microsoft is the only one of the five largest spenders still comfortably paying from its own cash. If capital binds, sellers of certainty keep collecting and sellers into short order books do not. The telecom buildout of 1999 to 2002 is the warning: durable assets did not guarantee durable supplier revenue. On October 22 the market started to price this, moving toward regulated revenue while GE Vernova finished -10.6%.

Power is the bottleneck because the buildout can move faster than the grid, and money is now a second one. Our answer is to rank the map twice, once by when each business gets paid and once by how that payment is secured.

Research built from primary sources, written for investors who want the reasoning as well as the conclusion.

ABOUT THE SIGNAL

The Signal is the research publication of Nova One. Every figure in this paper traces to a dated primary source: grid operators, federal agencies and laboratories, and company filings. Where sources conflict, we say so; where a number is our own arithmetic, we label it.

IMPORTANT INFORMATION

Not investment advice. This paper is published for information only and is not a recommendation to buy or sell any security. Companies are listed as exposed at each stage of the map, not as recommendations. Nova One Capital and its affiliates hold long positions in Amazon (AMZN), Microsoft (MSFT), Nvidia (NVDA), and Vistra (VST), discussed here. The investment case for some of those positions depends on the supply and power views described in this piece. Nova One Capital also keeps written entry and exit rules on other companies named here, including Alphabet, Meta, Constellation, Broadcom and Powell Industries, and those rules may execute before or after publication. Nova One does not trade any security this paper makes a directional case on for 48 hours before and after publication.

SOURCES

PJM capacity auction reports (Dec 17, 2025; Jul 14, 2026) and 2029/30 planning parameters (Aug 31, 2026); ERCOT Monthly Operational Overview (Oct 16, 2026); Lawrence Berkeley National Laboratory (Queued Up, May 2026; US Data Center Energy, Dec 2024 and Jun 2026); EPRI (Feb 2026); BloombergNEF (Jul 21, 2026); Grid Strategies (Nov 2025); Wood Mackenzie; Edison Electric Institute (Oct 9, 2026); FERC (ER26-3515, Oct 9, 2026); company 8-K, 10-Q and earnings materials for GE Vernova, Caterpillar, Baker Hughes, Bloom Energy, Generac, Eaton, Hubbell, Powell, Quanta, EMCOR, Comfort Systems, Kinder Morgan, Williams, Energy Transfer, Southern, AEP, Entergy, Constellation, Vistra, Talen, NextEra, Cameco, BWX Technologies, Curtiss-Wright, Centrus, Nvidia, Broadcom, Vertiv, Oklo, NuScale, Texas Pacific Land, Cipher, IREN, TeraWulf, Amazon, Alphabet, Meta, Microsoft and Oracle (July to October 2026); S&P Global; Moody's via Fortune (Jul 31, 2026); Morgan Stanley (Jul 16, 2025); Gartner (Oct 14, 2026); SemiAnalysis; Odlyzko (2003); EIA Short-Term Energy Outlook (Oct 6, 2026). Market moves: Yahoo Finance daily closes.

