
VELOCITY

“The Future Belongs to Those Who are Fast!”





Aligned partners with Calibrant to deploy battery system at data center in Pacific Northwest of US

Calibrant will deliver 31MW/62MWh BESS to the campus

October 22, 2025 By: Zachary Skidmore [Have your say](#)



Aligned Data Centers has partnered with Calibrant Energy, an energy storage developer, to deploy a Battery Energy Storage System (BESS) at one of its data centers in the Pacific Northwest of the US.



Watt's Next? How can batteries be best utilized in the data center sector?

A deep dive into the many use cases of battery energy storage

Under the terms of the agreement, Calibrant will deliver a 31MW/62MWh BESS system to the undisclosed data center campus. The system, which will be installed onsite, is planned for operations in 2026. According to the companies, the deployment will enable the facility to come online and scale operations much faster than would be possible through traditional utility upgrades.

"This project flips the script on how data centers access power," said Phil Martin, CEO at Calibrant. "Instead of waiting years for substation and transmission line upgrades, fossil-based generators, or going off grid entirely, we're working with leading data center providers like Aligned and engaged and forward-thinking utilities to use distributed energy solutions to meet their growth objectives."

The partners claim that the deployment is the first instance of a BESS system being purpose-built to accelerate the interconnection of a large-scale data center. The BESS will be developed using Calibrant's Path to Power solution. The solution enables the BESS to function as a grid-responsive asset, discharging during peak demand to bolster grid reliability and ensure uninterrupted service for the data center operators' customers.

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“INSTEAD OF WAITING YEARS FOR SUBSTATION AND TRANSMISSION LINE UPGRADES, FOSSIL-BASED GENERATORS, OR GOING OFF GRID ENTIRELY, WE’RE WORKING WITH LEADING DATA CENTER PROVIDERS LIKE ALIGNED AND ENGAGED AND FORWARD-THINKING UTILITIES TO USE DISTRIBUTED ENERGY SOLUTIONS TO MEET THEIR GROWTH OBJECTIVES.”

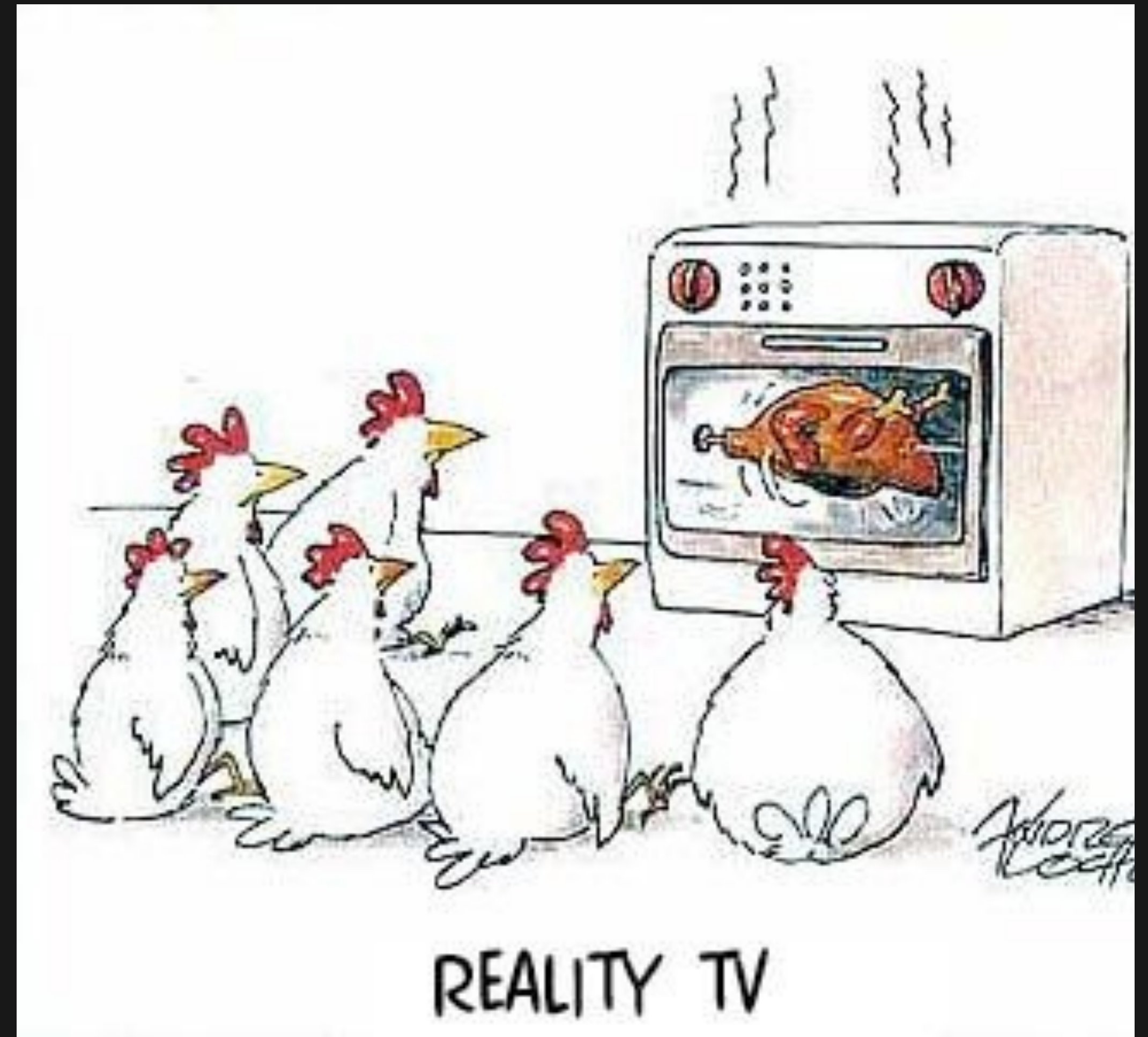
“**DATA CENTERS AREN'T THE VILLAINS OF THE ENERGY TRANSITION. THEY'RE THE STRESS TEST. IF WE GET IT RIGHT, AI'S DEMAND WAVE WILL PUSH THE GRID TO MODERNIZE FASTER.**

Seen on Twitter

THE FUTURE OF ENERGY

CHALLENGES AND BARRIERS!

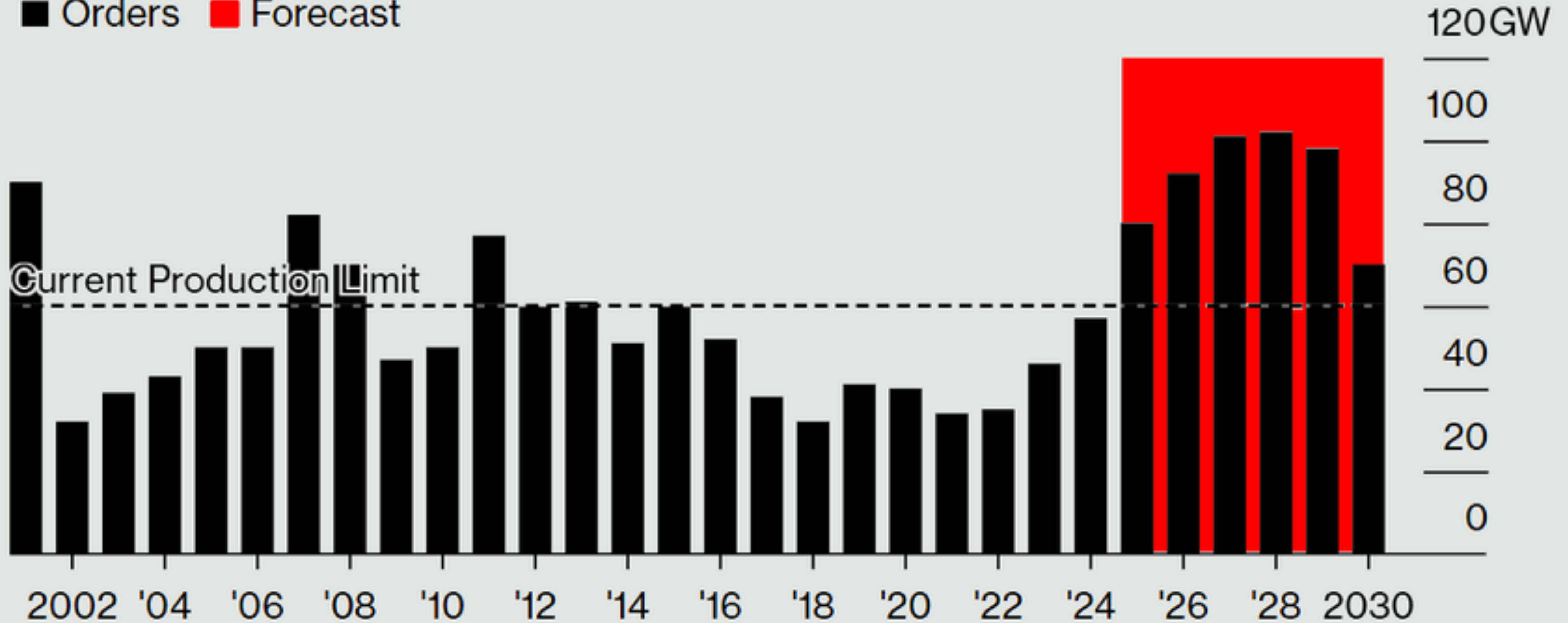
- Exploding electrification and data center load reshape demand.
- Aging grids face extreme weather and wildfire resilience gaps.
- Intermittent renewables require fast storage and flexible markets.
- Permitting, interconnection, and supply chains delay projects.
- Cyber risk and AI complexity demand real-time orchestration.
- Price volatility intensifies with congestion, ramps, and scarcity.



Gas Turbine Shortage

Orders for the power plant equipment are set to rise to the highest level in decades and outpace production capacity

■ Orders ■ Forecast



Source: Barclays; Wood Mackenzie; IEA; Bloomberg News



Microgrids & virtual distributed power plants



The Intelligent, AI Managed Energy Grid

Energy transformation and disruption



Evolving regulatory framework



Science and technology hyperinnovation

BATTERY AND STORAGE ARBITRAGE!



Tesla  **@Tesla** · 25m ...

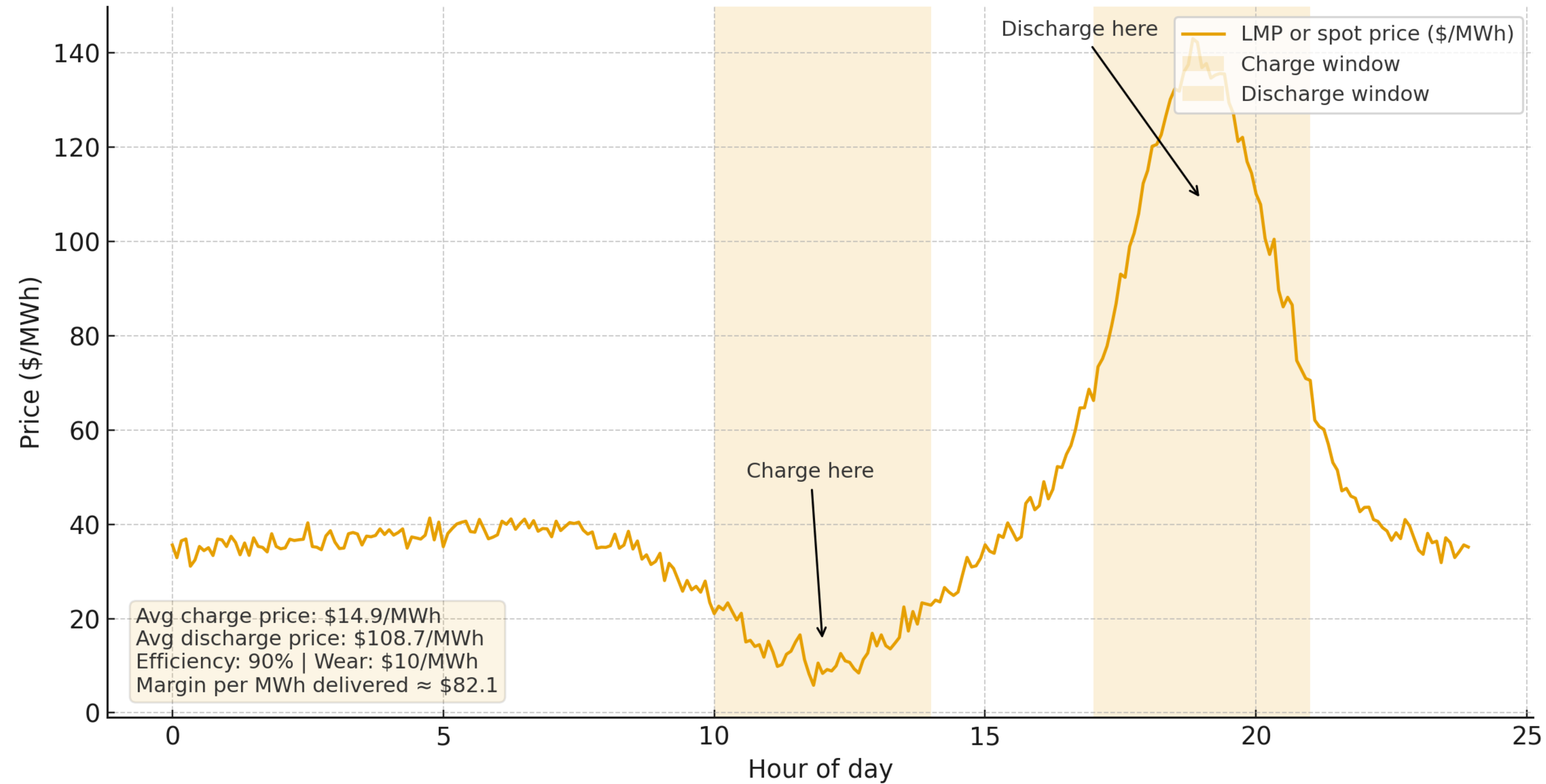
16 of the UK's 20 best-performing grid-scale batteries are optimized by Tesla Autobidder

Autobidder uses real-time data + AI to automatically buy & sell electricity, maximizing revenue while stabilizing the grid

FT **Financial Times**  **@FT** · 1d

Tesla dominates UK mega battery market on.ft.com/47geqns

Battery arbitrage example day



“ WHEN WE LOOK BACK IN 30-40 YEARS, HISTORY WILL TELL THAT ITS WHAT WE DID TODAY THAT PIVOTED US INTO THE FUTURE.

— TODD CONNER, XCEL ENERGY VP

“

**RETHINK HOW YOUR UTILITY IS
STRUCTURED. REINVENTING YOUR
MODEL BEFORE YOU'RE FORCED TO
GIVES YOU CONTROL OF YOUR FUTURE.**

— UTILITY LEADERSHIP MANDATE

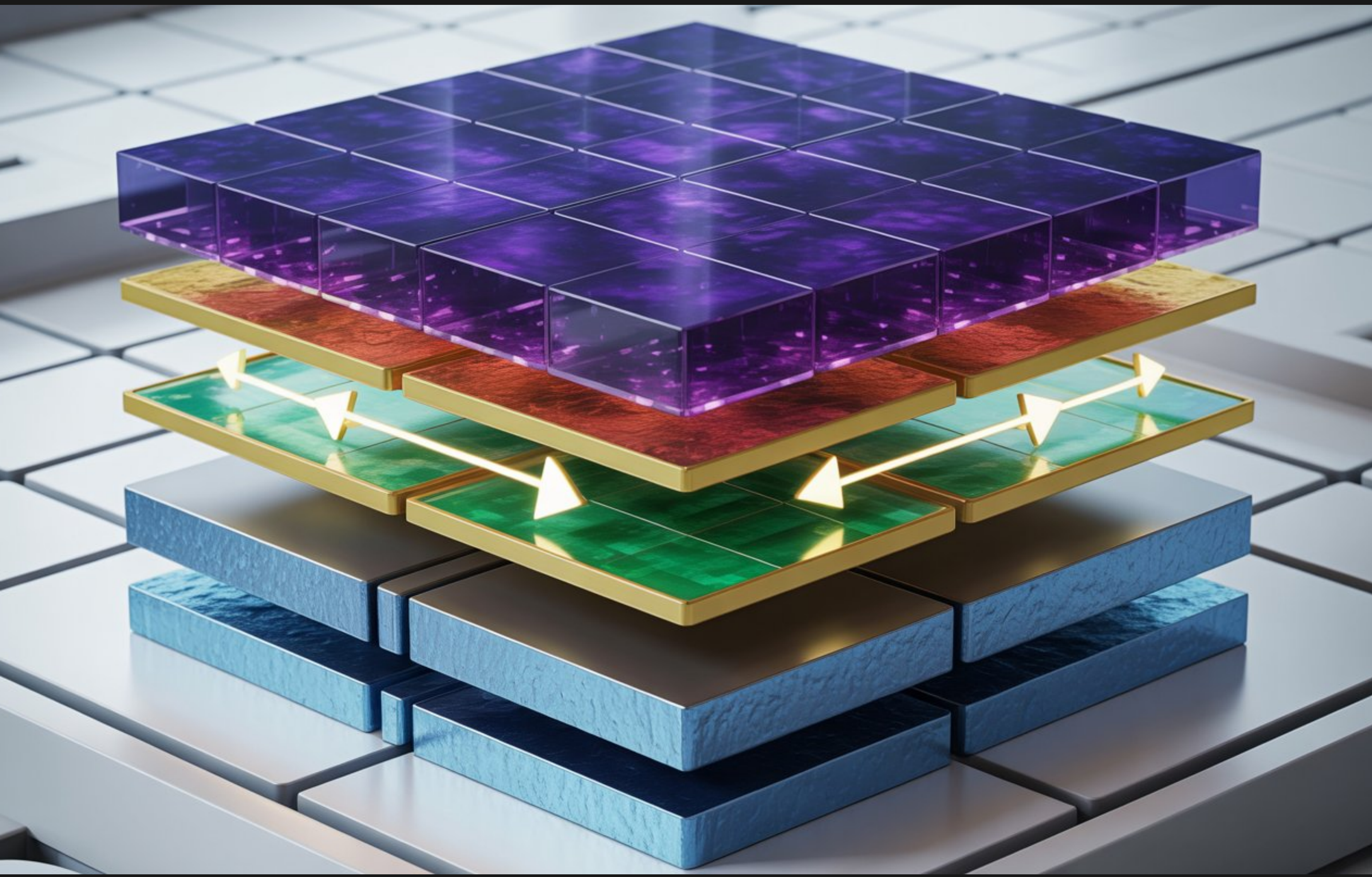
“The amazing math of chemical hyperscience”

(THE IMPACT OF EXPONENTIATION)

- 19 million known chemical substances
- the number doubling every 13 years
- 80 million by 2025
- 5 billion by 2100
- iPod? One substance!



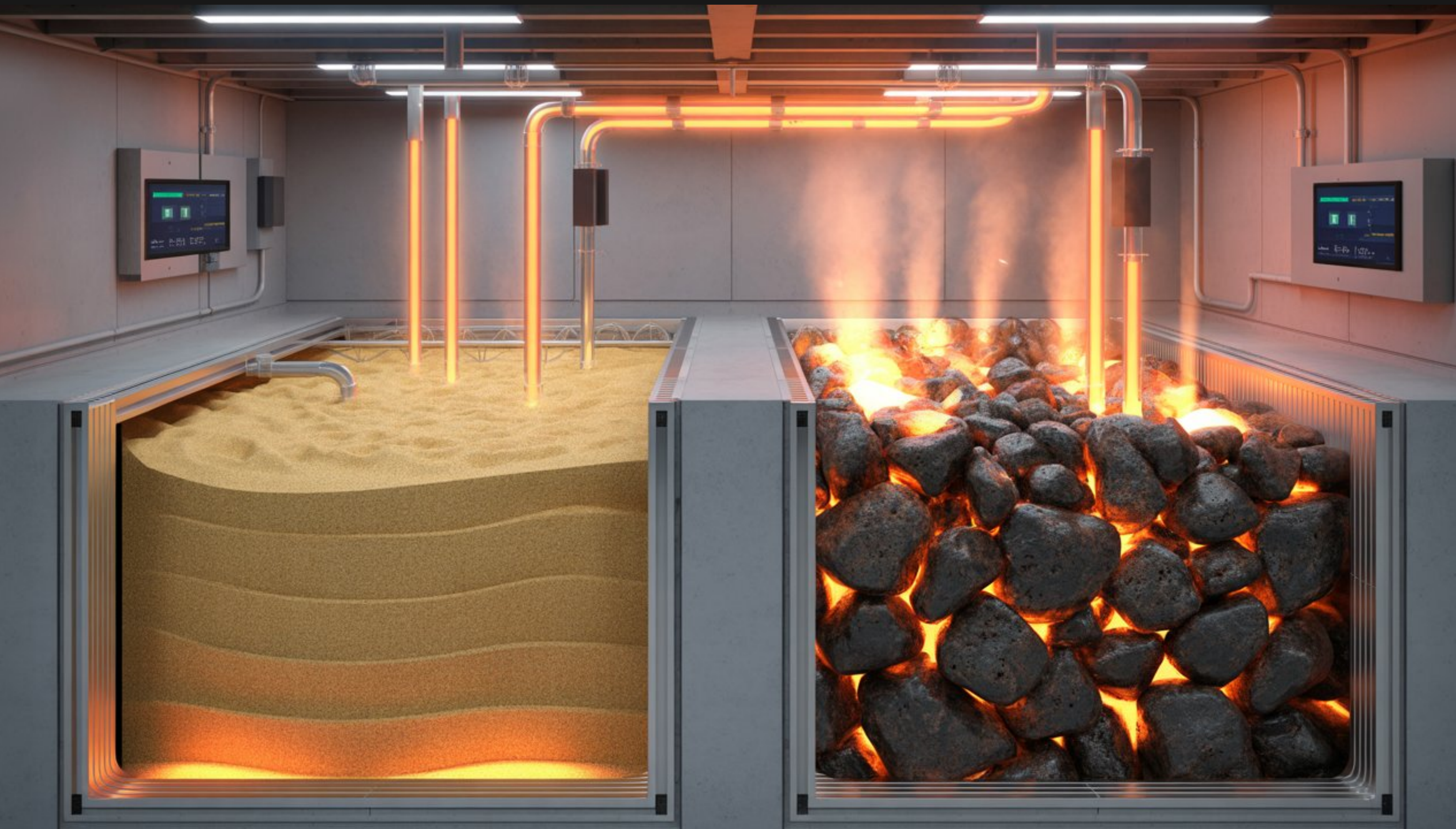
PEROVSKITE TANDEM SOLAR



Lab cells jumped past 30% efficiency. Pilot lines are moving from “sci-fi solar” to commercial modules.

At least 25% more energy from the same roof.

SAND AND HOT-ROCK BATTERIES



Heat stored in cheap materials delivers power for days. Finland and utility pilots prove the idea works.

ENERGY ACCELERATION

THE IMPACT OF FAST SCIENCE AND FAST TECH!



Decentralized Grid Adoption

\$42.6 billion in 2025
to \$228 billion in 2035



Lithium Ion Phosphate Battery Shift

85% market share in just 3 years



Wind Turbine Efficiency

38% to 43% in just five years

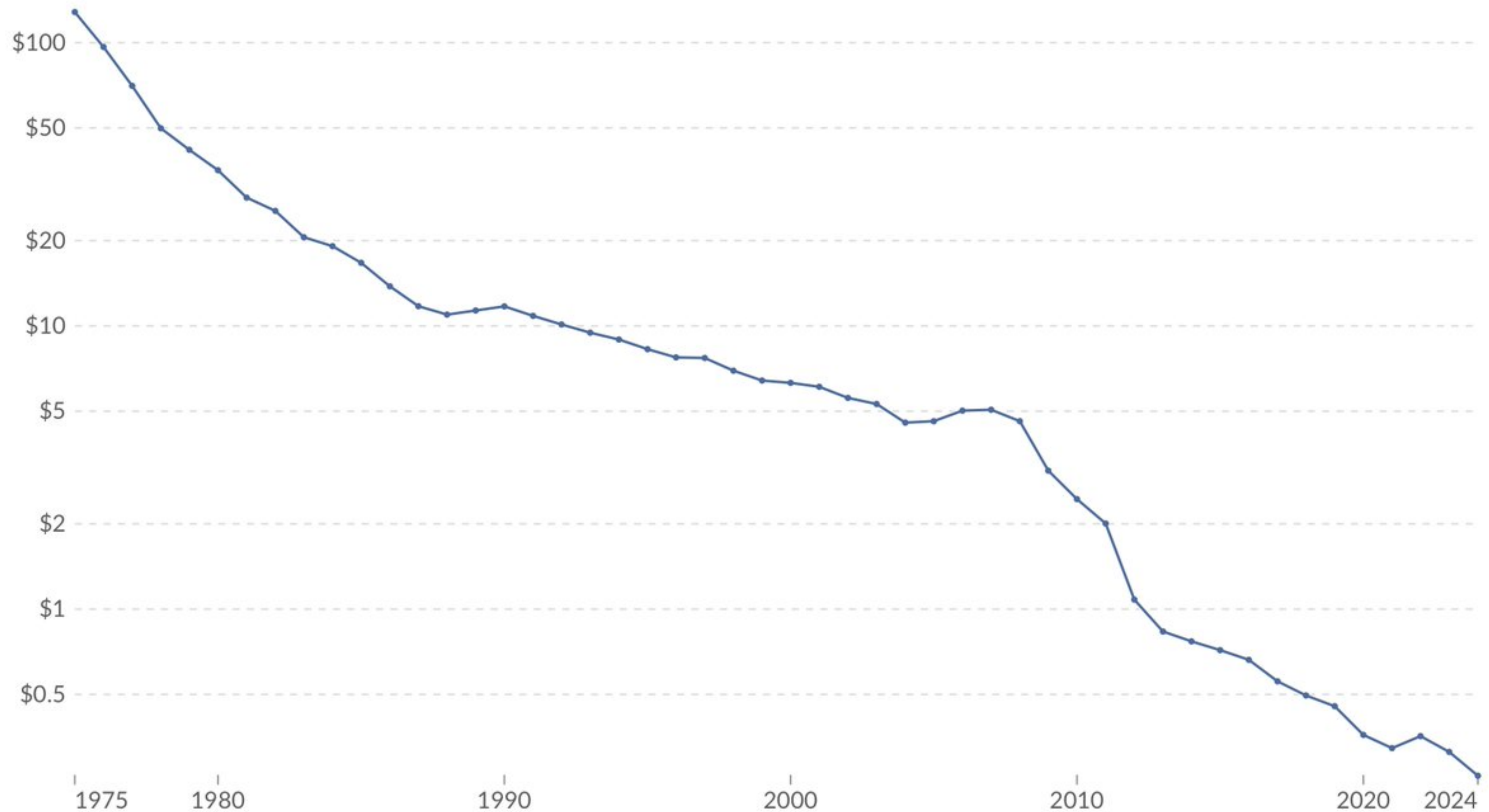


Energy AI Spend

\$4 billion in 2022 to
\$38bn in 2035

Solar (photovoltaic) panel prices

This data is expressed in US dollars per watt, adjusted for inflation.



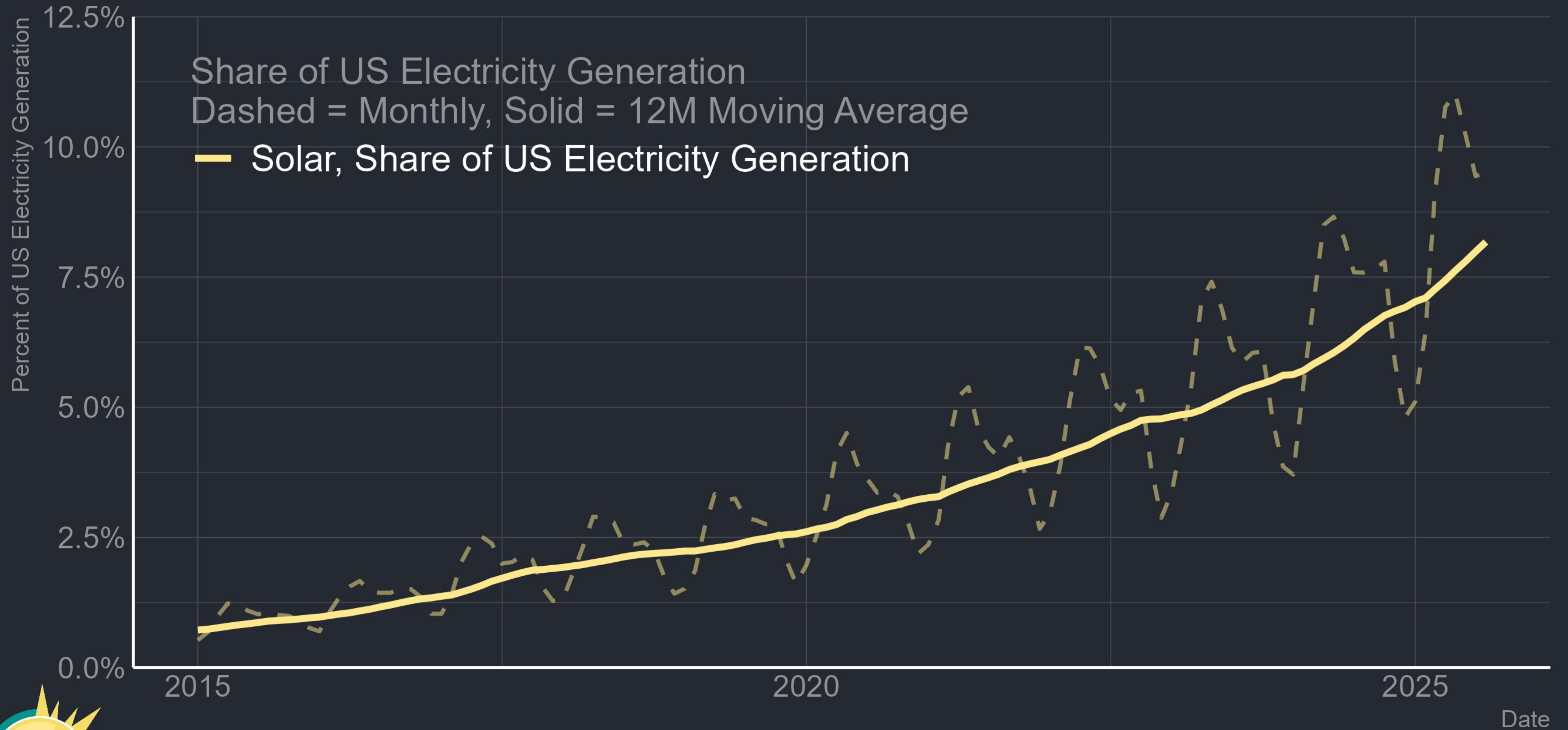
Data source: IRENA (2025); Nemet (2009); Farmer and Lafond (2016)

OurWorldinData.org/energy | CC BY

Note: Data is expressed in constant 2024 US\$ per watt.

Solar, Share of US Electricity

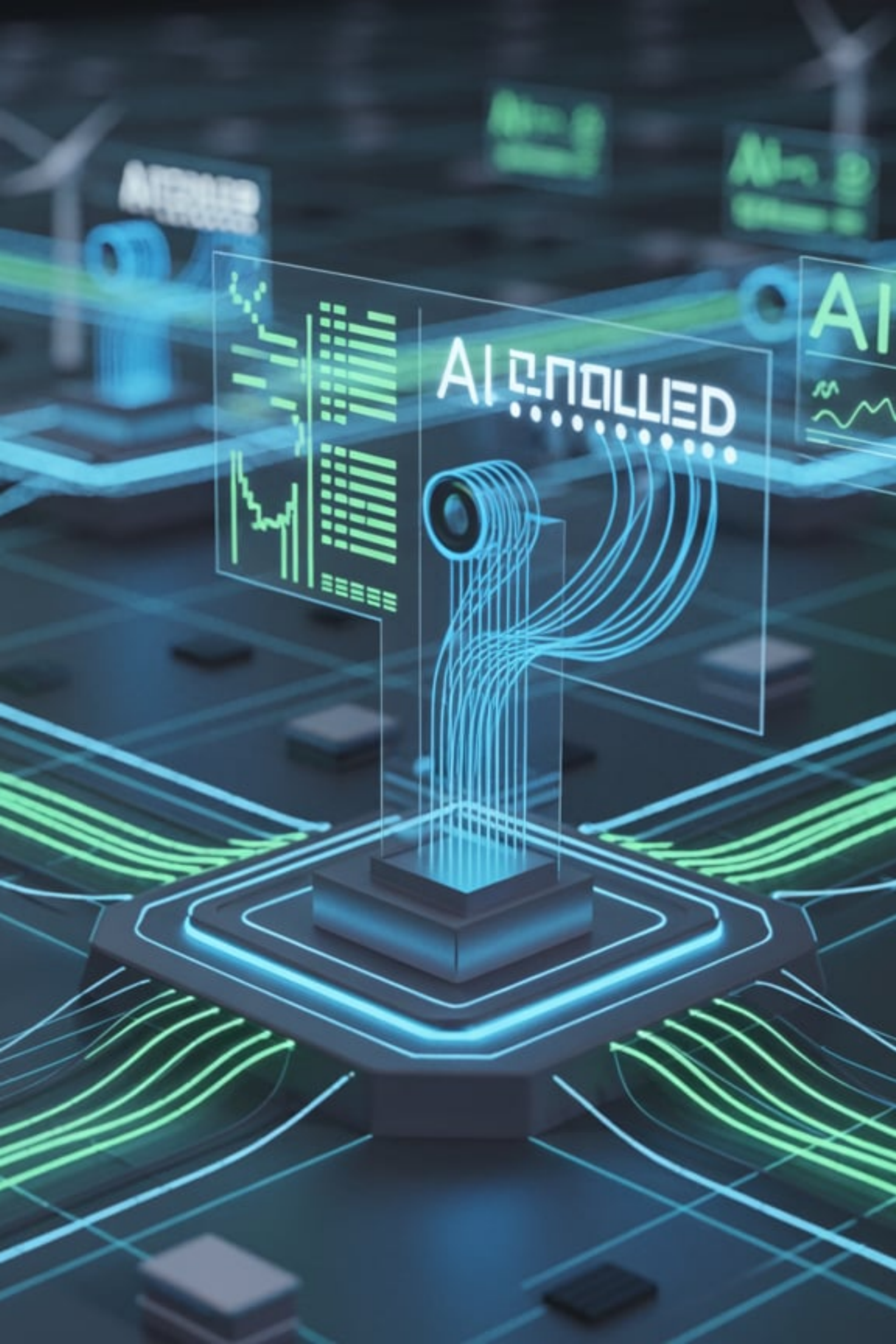
Solar is a Growing Share of US Electricity Generation



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**THE WORLD'S BEST SOLAR POWER
SCHEMES NOW OFFER THE 'CHEAPEST...
ELECTRICITY IN HISTORY,' WITH THE
TECHNOLOGY CHEAPER THAN COAL AND
GAS IN MOST MAJOR COUNTRIES.**

INTERNATIONAL ENERGY AGENCY (IEA)



“AI IS VIEWED AS A NEW, HOLISTIC OPERATING SYSTEM FOR THE ENTIRE UTILITY, CONTINUOUSLY LEARNING AND ADAPTING. THE RESULT IS A GRID THAT BEHAVES MORE LIKE A HIVE THAN A HUB—RESILIENT, ADAPTIVE, AND SELF-OPTIMIZING.”



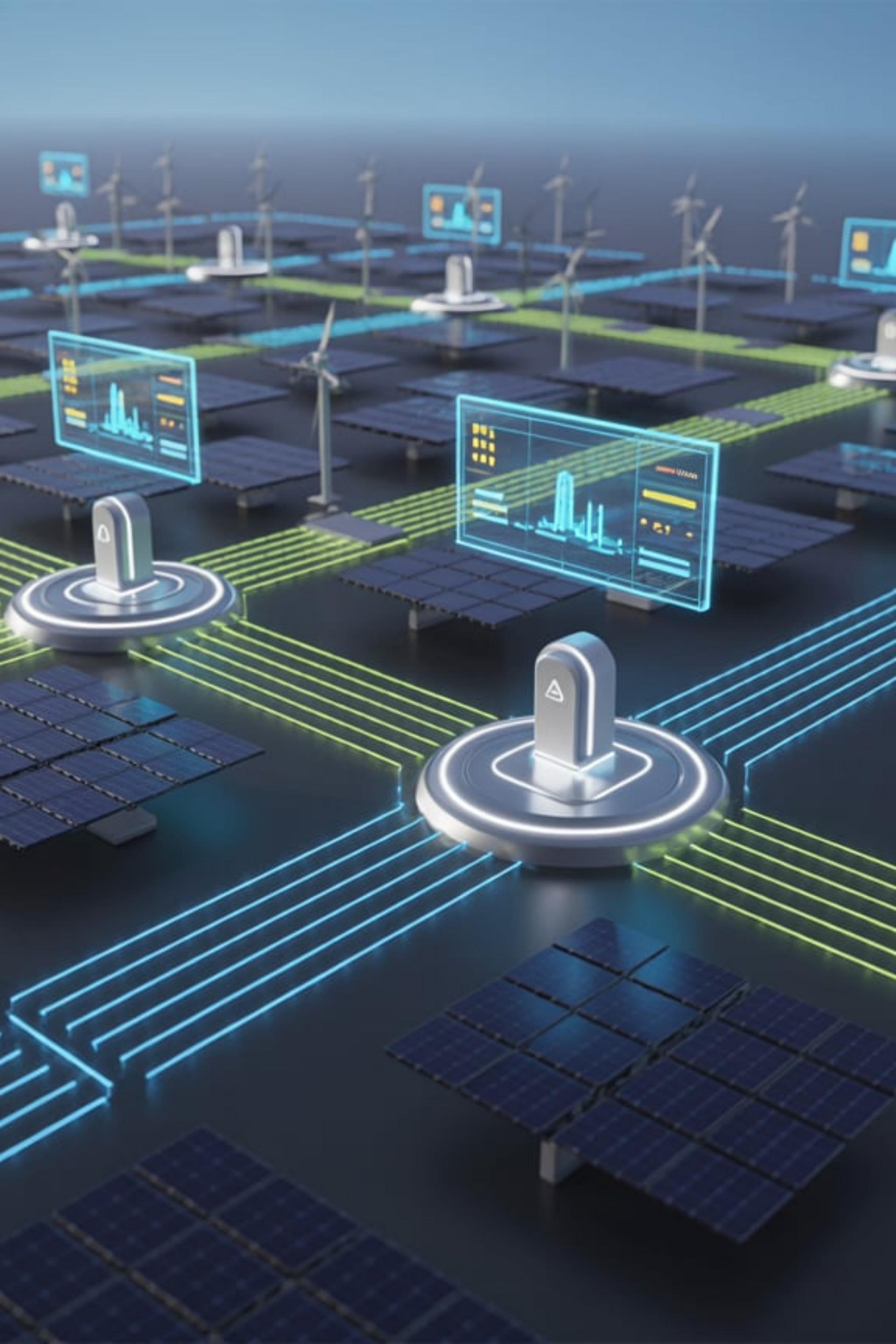
— GUIDEHOUSE



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**UNPLANNED POWER OUTAGES
COST MAJOR INDUSTRIES AN
AVERAGE OF \$125,000 PER
HOUR, ESTABLISHING AI-
DRIVEN RESILIENCE AS
URGENT INSURANCE.**

— ABB VALUE OF RELIABILITY SURVEY REPORT



“

**AI-BASED PREDICTIVE
MAINTENANCE CUTS UNPLANNED
DOWNTIME BY UP TO 50% IN
REAL-WORLD DEPLOYMENTS,
TRANSFORMING MAINTENANCE
FROM A COST CENTER INTO A
CORE VALUE GENERATOR.**

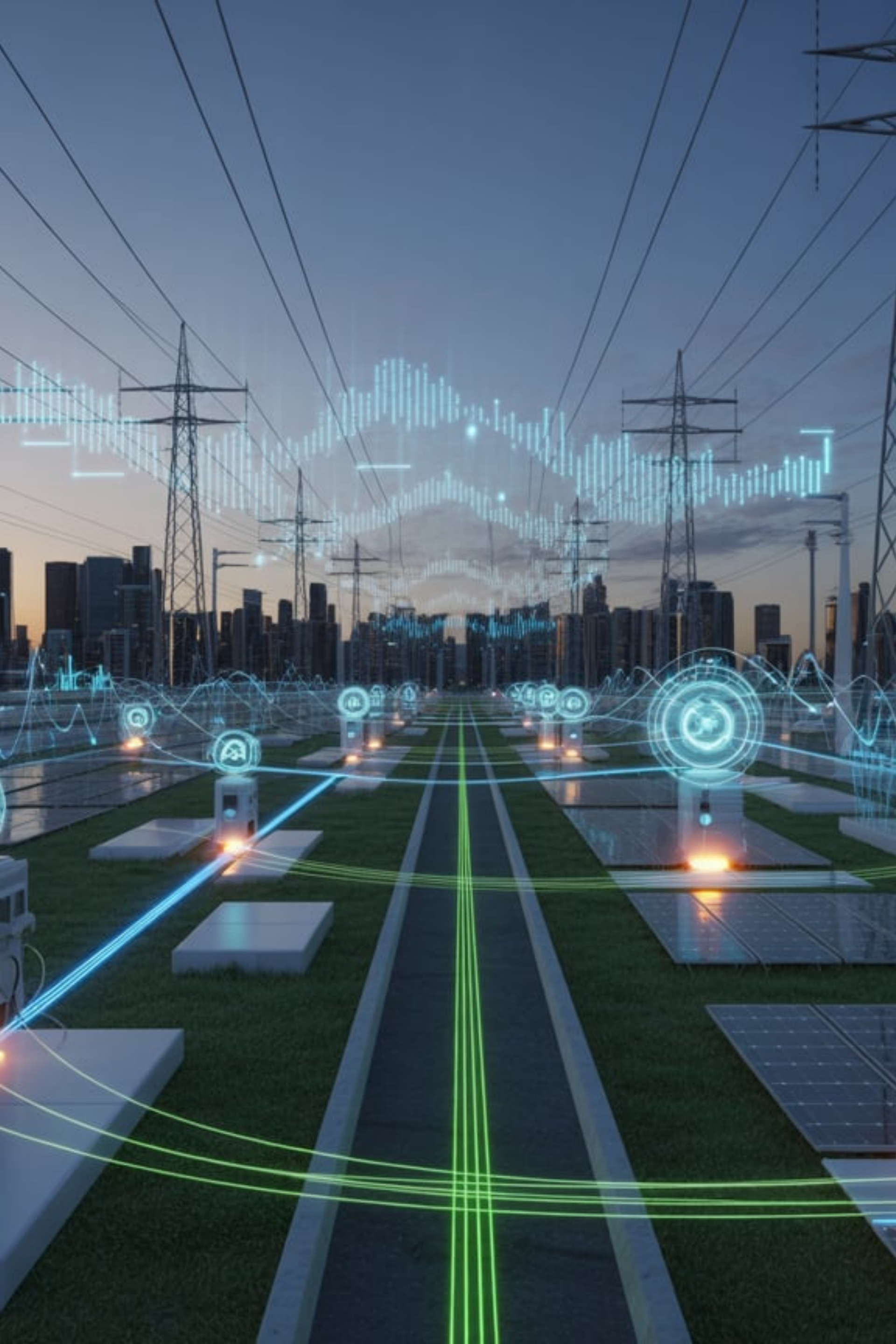
— INDUSTRY RESEARCH SUMMARY



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THE GLOBAL VIRTUAL POWER PLANT (VPP) AI MARKET SIZE IS PROJECTED TO GROW BY 7.5X, FROM \$1.62 BILLION IN 2024 TO \$12.17 BILLION BY 2033, UNDERSCORING THE URGENCY FOR INTELLIGENT MANAGEMENT SOLUTIONS.

— PRECEDENCE RESEARCH



“

“THROUGH THE INTEGRATION OF AI TECHNOLOGY, THE VPP CAN BETTER COPE WITH THE VOLATILITY AND UNCERTAINTY OF RENEWABLE ENERGY SOURCES AND ACHIEVE MORE ACCURATE AND EFFICIENT RESOURCE MANAGEMENT IN COMPLEX ELECTRICITY MARKET ENVIRONMENTS.

— ACADEMIC RESEARCH SUMMARY

October 16, 2025

Rondo Powers Up World's Largest Industrial Heat Battery

100 MWh Rondo Heat Battery, world's most efficient energy storage of any kind, now delivering 24-hour steam from off-grid solar power — proving a new path for factories to cut carbon and costs

ALAMEDA, Calif., October 16, 2025 – Today, Rondo Energy announced the start of commercial operation of the world's largest industrial heat battery. A 100 MWh Rondo Heat Battery (RHB) has entered daily automatic operation, powered exclusively by an on-site PV solar array and delivering continuous high-pressure industrial heat and steam to a fuel production facility in California. The unit sets new records for the industrial heat battery industry in capacity, round-trip efficiency, and power supply. This 100 MWh unit delivers a volume of heat equivalent to 10,000 home heating systems.



MingYang unveiled its next-gen floating wind turbine platform Ocean X.

its world's 1st 50MW ultra-large floating wind turbine platform using V shaped tower structure to twin-headed 25MW units.

Can operate in deep sea environment of > 40m depth!
Claims to be typhoon resistant.

The wind turbines just keep getting larger & larger
mp.weixin.qq.com/s/qY-zaP5MKLBX...



9:14 AM · Oct 22, 2025 · 3,622 Views

GRAVITY STORAGE



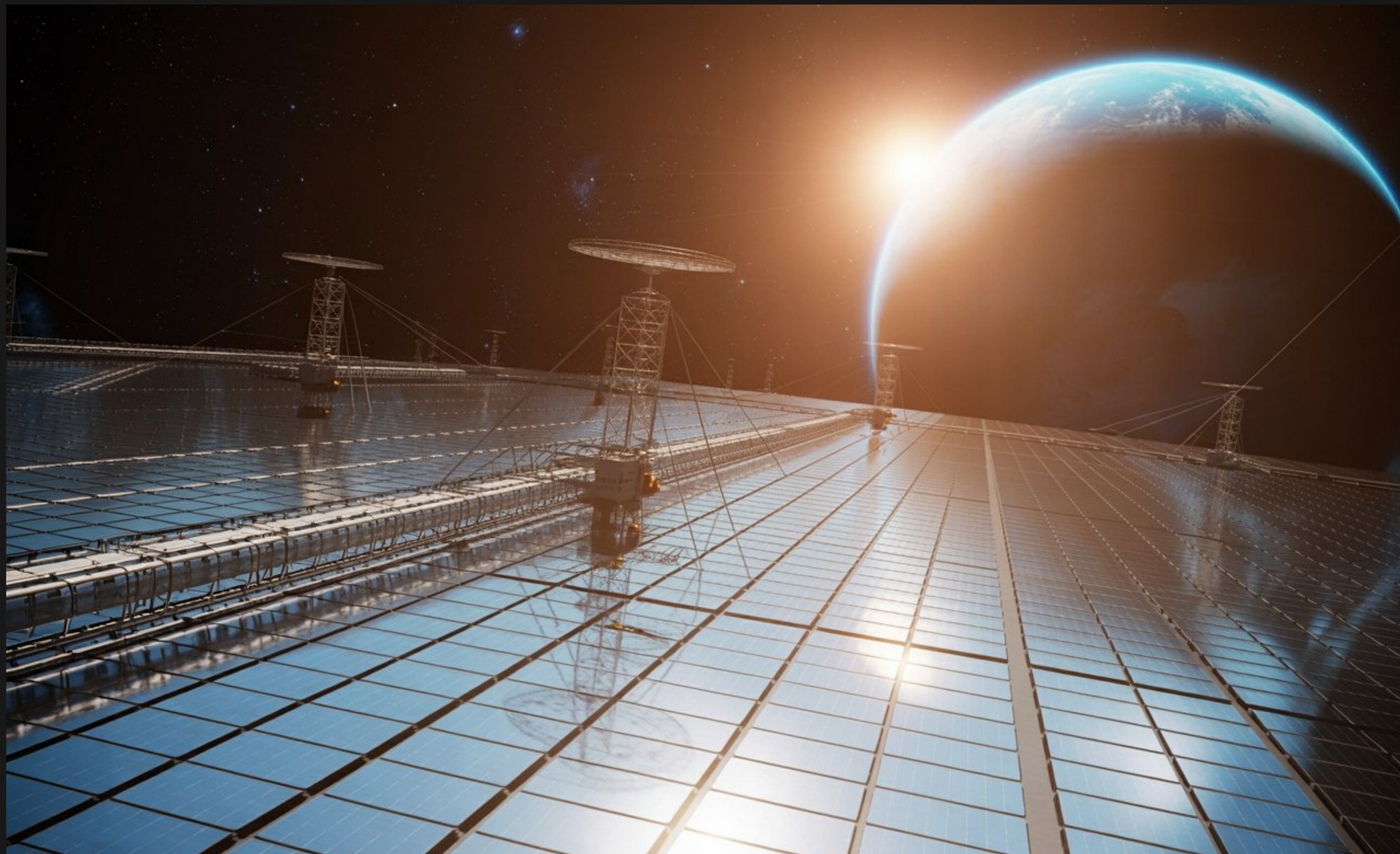
Cranes lift huge blocks when power is cheap, lower them to make electricity later.

DIGITAL TWINS OF THE GRID



A living software copy of the network tests upgrades, prices, and dispatch before touching real wires.

SPACE-BASED SOLAR



Microwave power beaming moved from cartoons to lab demos. Early tech paths are under way.

AI-NATIVE TRADING AND OPERATIONS



Short-term forecasts and auto-bids align storage, EVs, and flexible loads with 5-minute prices.

HOME ENERGY MANAGEMENT SYSTEMS (HEMS)

YOUR THERMOSTAT BECOMES A MARKET PARTICIPANT.

- HEMS coordinates rooftop solar, home batteries, EVs, heat pumps, and smart plugs using standards like IEEE 2030.5 and OpenADR
- Apps manage, store, and sell home electricity for cost and carbon savings
- When millions of homes can auto-bid and self-balance, where do you price flexibility and who owns the customer relationship?



Apps manage, store, and sell home electricity for cost and carbon savings.

UTILITY AS PLATFORM

YOUR THERMOSTAT BECOMES A MARKET PARTICIPANT.

- The profit center moves from selling electrons to orchestrating devices
- business model shifts from energy production to device management at scale
- FERC Order 2222 opens ISO and RTO markets to aggregated DERs.

FERC Order 2222 opens ISO and RTO markets to aggregated DERs.



SELF-HEALING MICROGRIDS

RESILIENCE AND RECOVERY BECOMES A REVENUE PRODUCT

- resilience becomes automated — island in sub-seconds, resync smoothly
- ie. campus and hospital microgrids riding through faults and wildfire shutoffs
- conversely, how do you price reliability when customers can opt out of outages?



TRANSACTIVE DER ENERGY IN REAL TIME

DEVICES BID AND CLEAR EVERY 5 MINUTES.

- thermostats, EVs, water heaters, and car batteries acting like tiny traders through an aggregator
- Real? 5-minute settlement is already live in CAISO and Australia's NEM; aggregators bundle devices to bid, clear, and settle with telemetry



“
inspiration.jimcarroll.com

Think BIG.

**Your future will
thank you for it.**

—
Futurist Jim Carroll

