

Emerald AI | ESIG

June 17



Emerald AI seeks to unlock multitrillion-dollar investments in AI data centers *today* by overcoming power grid bottlenecks

- **Emerald AI makes AI data centers flexible power users through a software-only platform** that orchestrates compute power use and onsite energy resources to bolster grid stability and avoid grid buildout without compromising compute service.
- **The opportunity is massive:** Roughly 100 GW of data centers could be connected to existing grids *today* if data centers had just modest flexibility. Emerald AI aims to enable data centers & cloud providers to speed time-to-power.
- **Emerald AI has completed five commercial demonstrations in partnership with leading energy and AI partners, expanded internationally, and announced a ~100MW commercial deployment with NVIDIA later this year.**
- **Flexibility is the key solution to get data centers access to power now** and will complement other solutions in future.

1. About Emerald AI

We are fortunate to be backed by NVIDIA and AI, energy leaders

Institutional Venture Investors



Select Individual Investors

Fei-Fei Li <i>Professor, Stanford University</i>	Jeff Dean <i>Chief Scientist, Google</i>	John Doerr <i>Chairman, Kleiner Perkins</i>
Secretary John Kerry <i>68th U.S. Secretary of State</i>	Tom Steyer <i>Co-Chair, Galvanize</i>	Mark Gallogly <i>Co-Founder, Three Cairns Group</i>
Chase Lochmiller <i>CEO, Crusoe</i>	Lukas Biewald <i>CEO, Weights and Biases</i>	Jonathan Frankle <i>Chief AI Scientist, Databricks</i>

Select Advisors

Secretary Gina Raimondo <i>40th U.S. Secretary of Commerce</i>	David Rousseau <i>President, Salt River Project</i>
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As Seen In



Leadership

Dr. Varun Sivaram <i>CEO</i>	Prof. Ayse Coskun <i>Chief Scientist</i>	Aroon Vijaykar <i>CCO</i>	Shayan Sengupta <i>Head of Eng.</i>	Mansi Shah <i>Head of Product</i>
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- Chief Strategy Officer, Orsted
- Sr. Advisor to Sec. Kerry, White House
- CTO, ReNew Power
- Professor, Boston University
- Director, Center for Information Systems & Systems Engineering
- Sunrun Head of Corp Dev; GM of AEE Solar; VPP & Grid Services
- Investor at Partners Group
- Amazon Web Services EC2 Nitro Storage Leader
- Led 50+ engineers, managing 1mm specialized GPU servers
- Chief Technologist, VMware
- Led \$200m+ enterprise data & distributed infrastructure portfolio

Employee Achievements

400+ Academic Publications ~50% Team Members with Ph.D.s

Company DNA



Power flexibility advances three critical goals

1



Access

Emerald enables utilities and grid operators to manage flexible data centers, with dispatch and monitoring capabilities.

2



Reliability

Emerald enables utilities and grid operators to manage flexible data centers, with dispatch and monitoring capabilities.

3



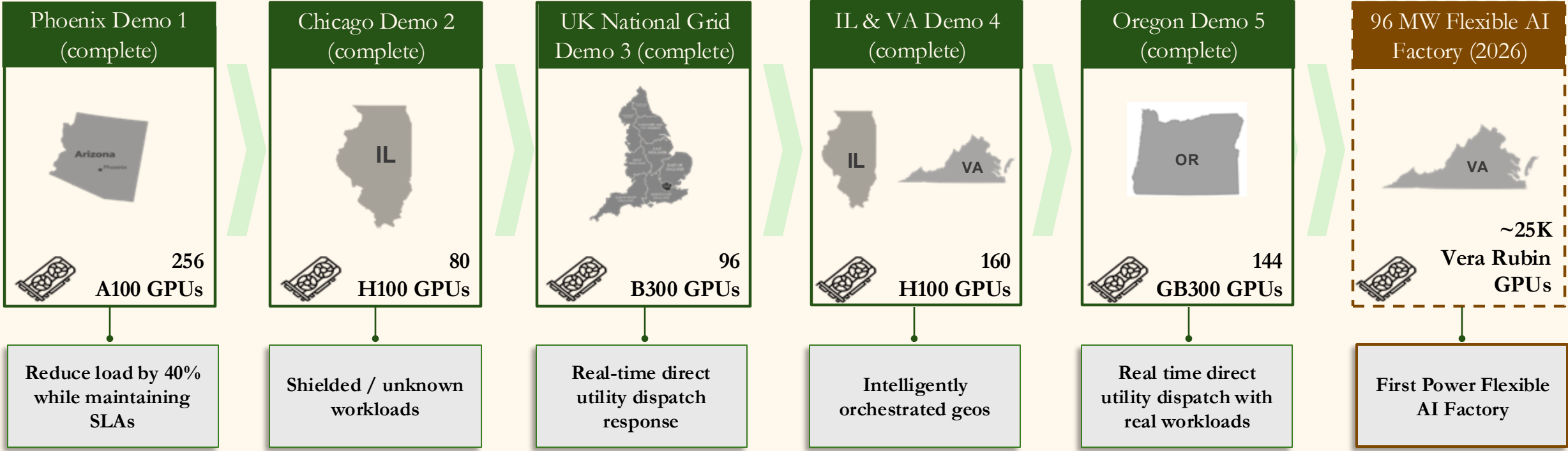
Affordability

Emerald enables utilities and grid operators to manage flexible data centers, with dispatch and monitoring capabilities.

2. Deployments

We have completed a series of successful deployments & demonstrations, with a power flexible AI factory to be deployed later this year


Demo Schedule



Proven at scale: five commercial demonstrations


In Deployment #3, we built upon previous demos with real time curtailment from our grid partner in our first UK demo

AI Inference Clusters in the UK with Nebius Data Centers



THE TIMES
AI start-up helps National Grid to manage data centres' power use
Artificial intelligence will give them flexibility to reduce their electricity consumption at peak times
EXCLUSIVE

National Grid and Emerald AI announce strategic partnership to demonstrate AI power flexibility in the UK




96 NVIDIA B300 GPUs (~130 kW)
At a Nebius Data Center

capabilities


Live Grid submissions

Utility partner independently sent power targets, without warning




Real time response

Data center was asked to respond to power targets in real time to simulating a grid emergency



Precision signal following

Following CO2 intensity signals at high temporal granularity (1 minute)



Project Partners



Conductor reduces AI cluster power during simulated high load period due to tea kettle use during major TV event breaks in the UK

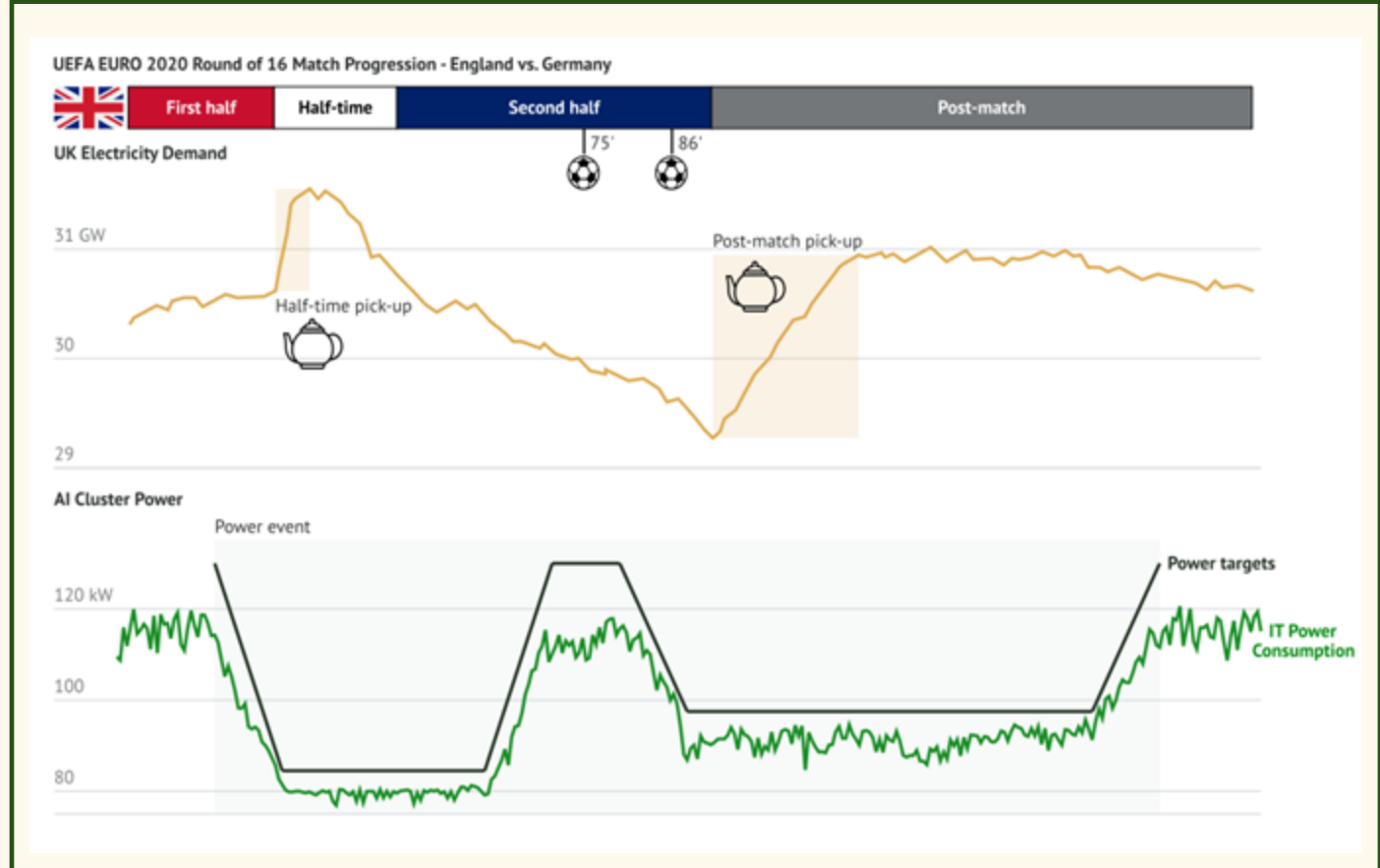
Goal

Demonstrate that an AI cluster can meet a designated power reduction in response to high periods of electricity use during major TV breaks in the UK

Results

- Successfully reduced cluster power by **35% for 30 minutes surrounding halftime** and for **25% for one hour at the end** of a football match, helping combat the ‘**TV Pickup**’ phenomenon as viewers fire up electric tea kettles during breaks in TV viewing
- Helped ease burden from a National Grid ESO-wide spike of **1 GW at half-time** and **1.6 GW at full-time**

Cluster Power Trace during soccer match (35% and 25% Reductions)



National Grid sought to surprise and stress the system; Emerald Conductor handled grid events with 100% precision and seconds-level response times

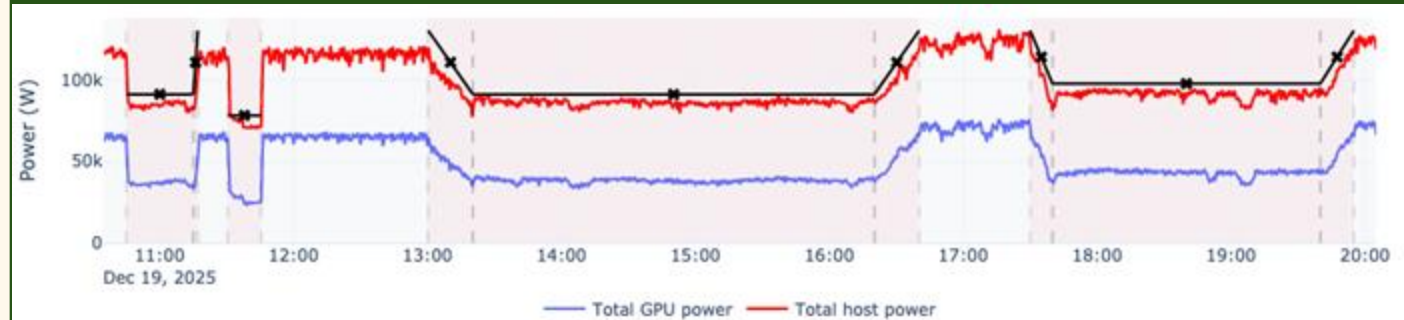
Goal

Reduce AI cluster power in response to grid events submitted by a third party, with no prior knowledge from Emerald AI

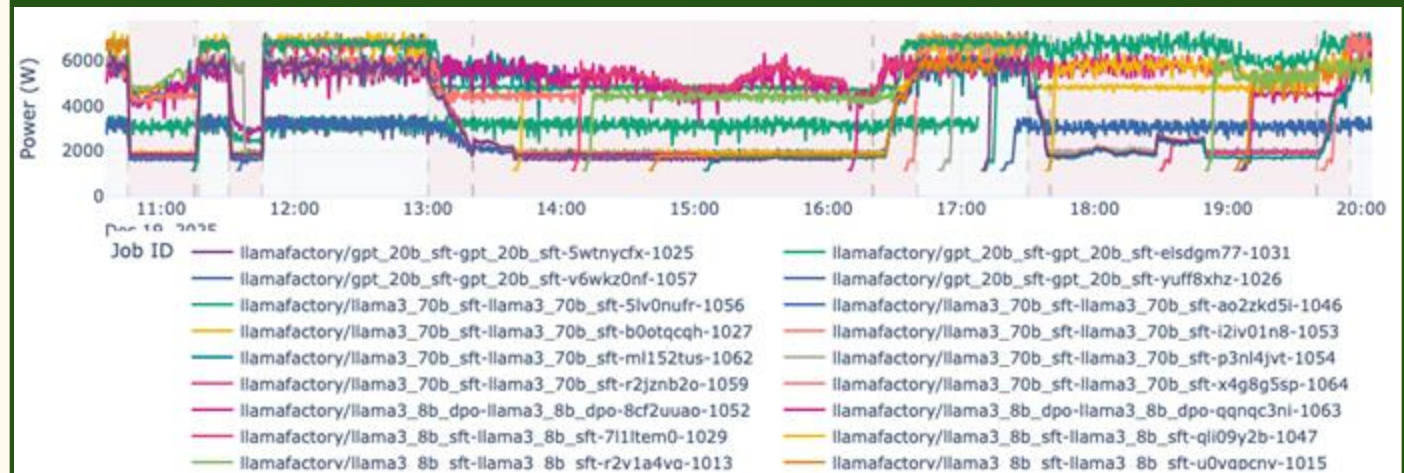
Results

- National Grid submitted four events in a 9-hour window for Conductor to respond to
- Two events were **zero lead-time** and **zero ramp-time** - an as-fast-as-possible power reduction to a **30% and a 40% reduction**, respectively
- Emerald AI achieved the two zero-ramp-time power reductions in **under 40 seconds and 80 seconds**
- These events were followed up by two **sustained 30+% power reductions for 2-3 hours each**

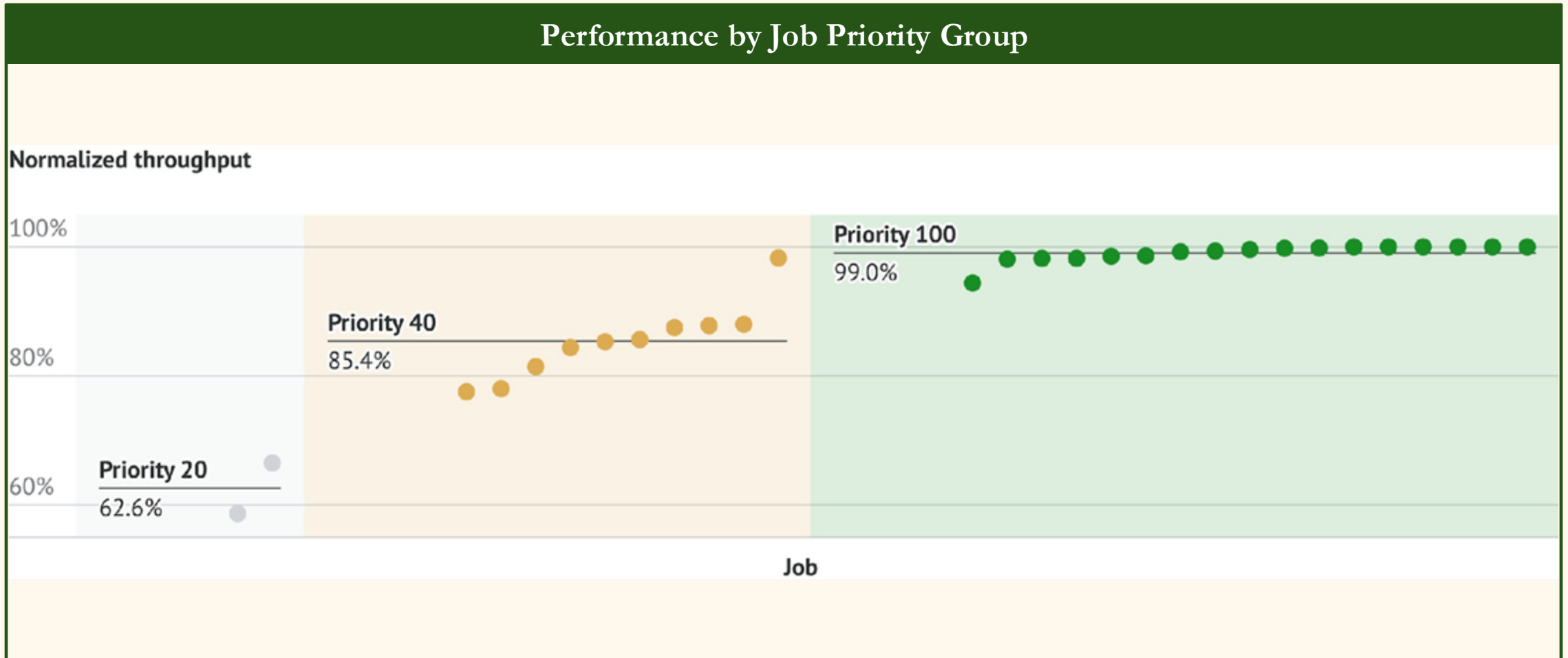
Cluster Power Trace (30%, 40%, 35%, and 30% Reductions)



AI Workload Power Traces



Emerald Conductor protects high-priority workload performance, while delivering precise load reduction requested by the grid



3. Policy

The Challenge:

America's AI buildout is outpacing the electric grid. Interconnection queues have grown from 70 GW to 380 GW in Texas alone in eighteen months -- **70% driven by data centers.**

ERCOT's large load queue jumped almost 300% last year

The surge has "outgrown the process that was established for reviewing these large loads," an Electric Reliability Council of Texas official said.

Published Jan. 6, 2026



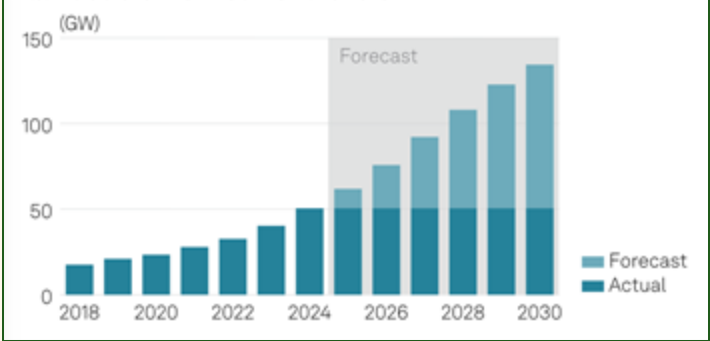
UTILITY DIVE

Data Centers' Hunger for Energy Could Raise All Electric Bills



Data center grid-power demand to rise 22% in 2025, nearly triple by 2030

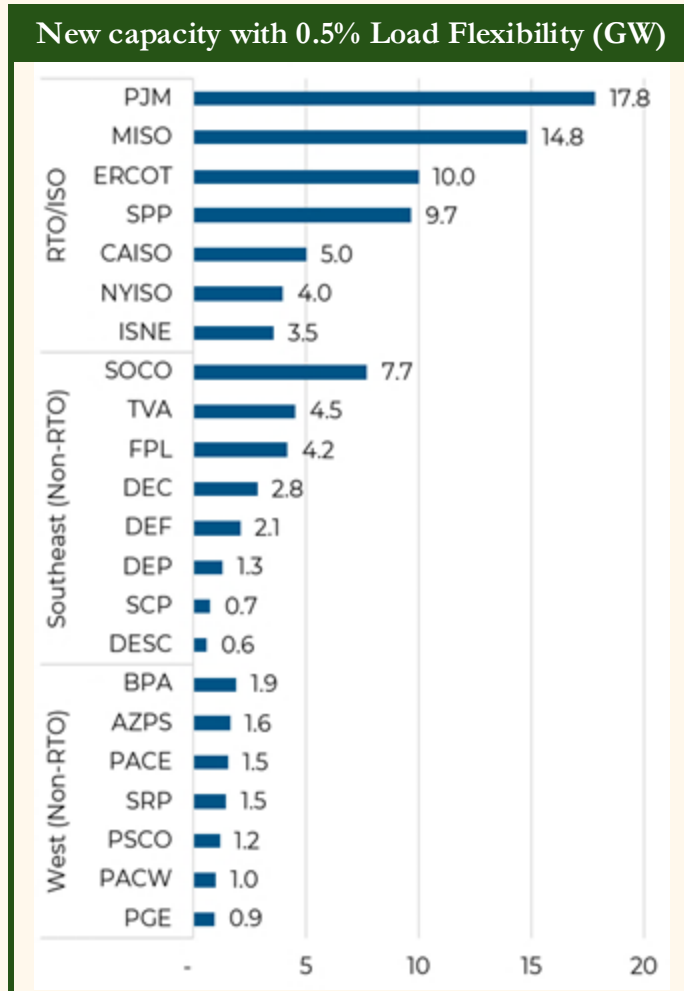
S&P Global



Year	Actual (GW)	Forecast (GW)
2018	20	
2020	25	
2022	35	
2024	50	
2025		65
2026		80
2028		110
2030		140

The fastest path to AI infrastructure runs through flexibility

Roughly 100 GW of new data centers could be connected to US power grids today—without new grid or power plant infra—using just modest load flexibility.



Reliability

Sub-minute emergency response, held autonomously for hours.



Access

Eases grid constraints, increasing grid efficiency and improving interconnection timelines.

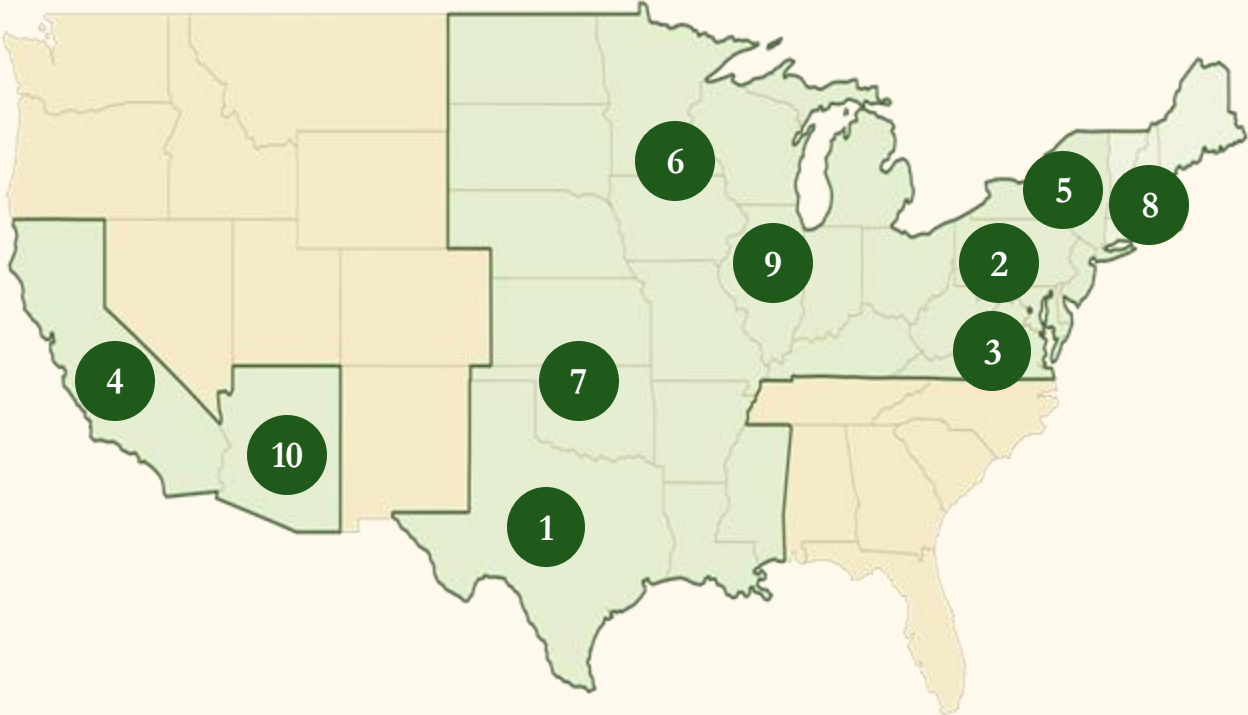


Affordability

Gets more out of existing grid assets, avoiding costly new buildout.

Where load flexibility policy is advancing

Policy momentum is broad: across U.S. markets, states, federal regulators, and abroad



FERC, NERC, and every major U.S. RTO have load-flexibility proceedings open in 2026 — alongside parallel reforms internationally.

U.S. Markets & States

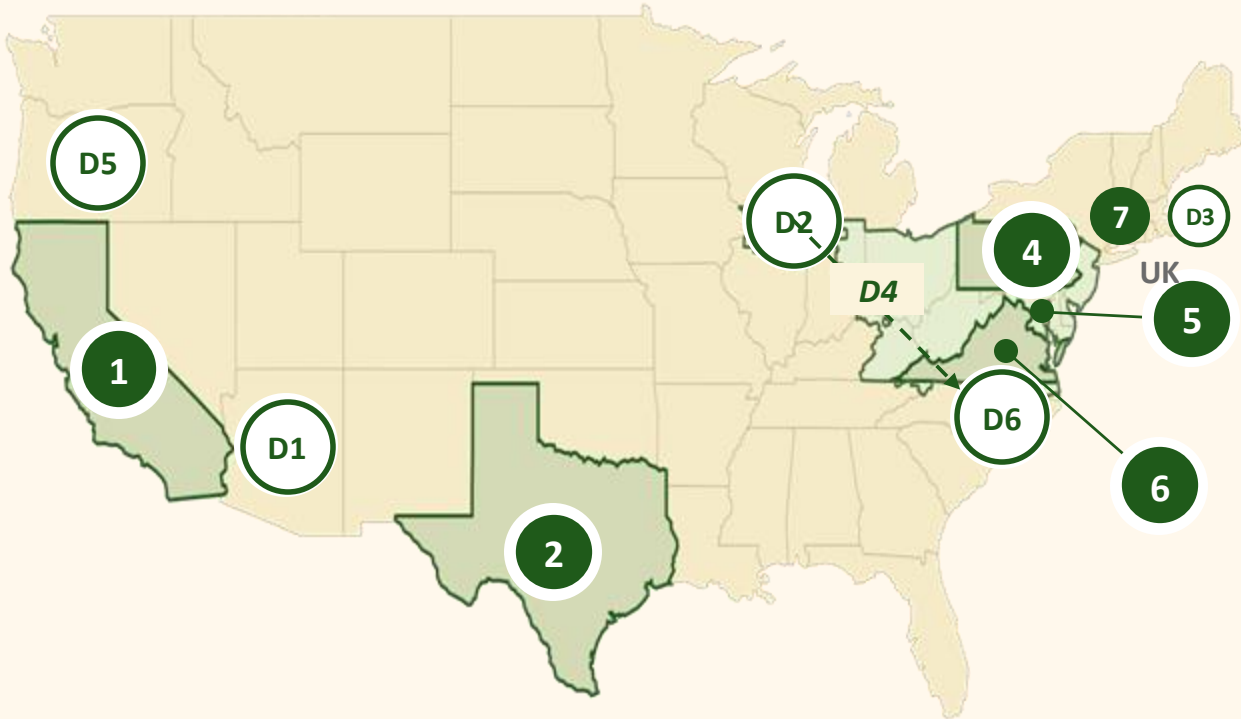
- 1 **ERCOT / Texas**
Connect and Manage
- 2 **PJM**
Connect and Manage
- 3 **Virginia**
Interconnection Queues
- 4 **CAISO / California**
PEDRIT
- 5 **NYISO / New York**
PSC proceedings
- 6 **MISO**
Large Load WG
- 7 **SPP**
CHILLS, HILLS, and HILLGA
- 8 **ISO-NE**
- 9 **Illinois**
POWER Act (SB 4016)
- 10 **Arizona**
ACC large-load workshop

Federal & International

- **FERC**
Large-load NOPR (June 18)
- **NERC**
- **UK — Ofgem / NESO**
- **Japan — METI / TEPCO**

Where we've engaged

Here's where flexibility is being decided right now



Project DS9 — a 96 MW power-flexible AI factory in Manassas, Virginia launching H2 2026 — will serve as the **first commercial-scale reference deployment** of this complete flexibility stack.

Forums

- 1 California**
SVP Program
- 2 Texas**
ERCOT large-load process
- 3 PJM**
Connect and Manage
- 4 Pennsylvania**
State PUC proceedings
- 5 Federal**
FERC + DOE engagement
- 6 Virginia**
State Corporation Commission
- 7 United Kingdom**
Ofgem



Demos

- D1 Phoenix**
256 A100s
- D2 Chicago**
80 H100s
- D3 UK**
96 B300s
- D4 IL & VA**
160 H100s
- D5 Oregon**
144 GB300s
- D6 Virginia**
Project DS9

Modernized Policy is the Key Unlock

Data center flexibility is ready at commercial scale, today. Yet too often, policy barriers impede the grid's ability to benefit from the value and opportunity available.

1 Expedite connection for flexible loads

Create pathways for loads with verifiable flexibility to access power faster, easing queue pressure for all projects.

2 Adopt technology-neutral standards

Evaluate flexibility on measurable outcomes, not prescribed hardware or generation, keeping software-enabled solutions in scope.

3 Benefit from the full value flexibility affords

Design tariffs and programs that pay for capacity relief, congestion management, renewable integration, and emergency response.

4 Build on demonstrated models

Scale from existing frameworks, SVP's FLIP in Santa Clara, ERCOT's PCLR pathway in Texas, into other geographies.

Thank you

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