

From: Quinn, Brian M. <BQuinn@Venable.com>
Sent: Thursday, January 30, 2025 11:59 AM
To: West, Chris Senator
Subject: RE: PJM - 2025 load forecast

Senator West,

PJM posted the story below that further explains the 2025 load forecast. Please let me know if you have questions.

Want to bring to your attention a statement from the story below:

"PJM has warned that a capacity shortage could affect the PJM system as early as the 2026/2027 Delivery Year, which begins June 1, 2026."

<https://insidelines.pjm.com/2025-long-term-load-forecast-report-predicts-significant-increase-in-electricity-demand/>

2025 Long-Term Load Forecast Report Predicts Significant Increase in Electricity Demand

PJM and Members Taking Action To Maintain Generation Supply

January 30, 2025

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The PJM 2025 Long-Term Load Forecast Report (PDF) predicts significant growth in electricity demand over a 20-year planning horizon.

According to the forecast, released Jan. 24, PJM expects its summer peak to climb about 70,000 MW, to 220,000 MW over the next 15 years. The record summer peak for the PJM footprint occurred in 2006 at 165,563 MW.

While winter peaks will remain slightly lower, the 2025 Long-Term Load Forecast shows winter closing the gap in peak electricity use, estimated at 210,000 MW by 2039. PJM's record-high winter peak occurred last week, when PJM served a preliminary load of approximately 145,000 MW on the morning of Jan. 22, according to preliminary load estimates. Current generating capacity in PJM is about 183,000 MW.

2025 Long-Term Load Forecast – Changes From Previous Forecast

Year (Winter Season Dec – Feb)	Winter Peak (MW)	Change from 2024 Long-Term Load Forecast (MW/%)	Year	Summer Peak (MW)	Change From 2024 Long-Term Load Forecast (MW/%)
2024/25	136,127	-201 (-0.1%)	2025	154,144	651 (+0.4%)
2029/30	167,237	14,367 (+9.4%)	2030	183,883	16,010 (+9.5%)
2034/35	198,175	32,470 (+19.6%)	2035	209,923	30,301 (+16.9%)
2039/40	209,718	N/A	2040	220,224	N/A
2044/45	218,760	N/A	2045	228,544	N/A

"This forecast captures the dramatic increases in future energy demand, as evidenced by the last two years when data center development has grown exponentially," said Aftab Khan, Executive Vice President, Operations, Planning & Security.

This year, PJM extended the forecast horizon from 15 to 20 years in keeping with the new Order 1920 long-term transmission planning rule from the Federal Energy Regulatory Commission. The annualized growth rate over the next 20 years for the summer peak is 2.0%, compared with the 2024 Long-Term Load Forecast, which saw a comparable growth rate of 1.6% through 2039. Similarly, the 20-year annualized growth rate in the 2025 Long-Term Load Forecast for the winter peak is up to 2.4%, compared with 1.8% for the previous 15-year forecast.

PJM has warned that a capacity shortage could affect the PJM system as early as the 2026/2027 Delivery Year, which begins June 1, 2026. Factors driving this concern include:

- The demand for electricity is growing at the fastest pace in years, primarily from the proliferation of data centers, electrification of buildings and vehicles, and manufacturing.
- Thermal generators – which provide the dispatchable generation needed to maintain reliability – are retiring at a rapid pace due to government and private sector policies as well as economics.
- New replacement resources with the needed reliability attributes aren't being built fast enough.

To mitigate the risk of a capacity shortage, the Board of Managers has directed efforts intended to bring capacity online more expeditiously and make sure price signals accurately reflect supply-demand fundamentals. These efforts include:

- **Interconnection Process Reform:** PJM and stakeholders have worked for several years to improve the process by which new generation gets connected to the grid. Approximately 50,000 MW of projects are now through the PJM study process and clear to build. Between 2024 and 2026, PJM expects to process approximately

170,000 MW worth of generation projects, mostly renewables and storage. PJM planners and impacted transmission owners have studied about 1,200 projects since interconnection process reform was implemented in July 2023.

- **Reliability Resource Initiative (RRI):** The RRI is a narrowly tailored, one-time proposal filed with FERC that is designed to expedite the interconnection of a limited number of shovel-ready generating resources. A FERC decision on the PJM RRI proposal is expected in February 2025.
- **Surplus Interconnection Service (SIS):** PJM has filed with FERC a proposal to streamline existing SIS Tariff provisions to allow new generators that do not trigger transmission system upgrades to use an existing generator's unused interconnection capability without having to go through the generation interconnection process. A FERC decision on proposed changes to SIS is expected in February 2025.
- **Capacity Market Adjustments:** PJM has filed with FERC a handful of modest reforms that reflect system realities to ensure the market continues to represent supply-demand fundamentals, risk and resource performance, and evolves as the system evolves. The auction date for the 2026/2027 Delivery Year was moved from December 2024 to mid-2025 to provide time for FERC approval and subsequent adjustments to proposed market rule changes. PJM's filings seek to maintain the model resource used to help set prices in the capacity market, better reflecting current economic realities of developing new generation. PJM also proposed to acknowledge the contribution of Reliability Must-Run resources in the capacity market, where appropriate, to better reflect the system's available supply.
- **Capacity Interconnection Rights (CIR) Transfer Reforms:** PJM will soon file with FERC a reform package endorsed by stakeholders designed to facilitate an expedited interconnection process for a replacement resource seeking to use the CIRs of a deactivating resource.

Accounting for Large Load Adjustments to the Forecast

PJM annually solicits information from its member electric distribution companies (EDCs) for large load shifts (either positive or negative) that are known to the EDCs but may be unknown to PJM. PJM reviews the requests, gauging their significance and risk of double-counting; for example, is the trend likely to have been captured in the economic forecast? For the 2025 Long-Term Load Forecast, these include:

- Data centers (AEP, APS, ATSI, BGE, ComEd, Dayton, PECO, PL, PS, Dominion)
- Industrial (AEP)
- Electric-vehicle battery manufacturing (COMED)
- Steel facility (Duke)
- Electrification of New Jersey ports of Bayonne, Elizabeth and Newark (PS)

The Long-Term Forecast Process

This report includes long-term forecasts of peak loads, net energy, load management, distributed solar generation, plug-in electric vehicles (EVs) and battery storage for each PJM zone, region, locational deliverability area and the total RTO. The long-term forecast is for planning purposes and is separate from the daily and weekly forecasts performed by PJM Operations to prepare for daily load changes.

The PJM long-term load forecast is constructed using 24 hourly models for each transmission zone. In each model, load is the dependent variable, considered alongside weather, calendar events, economic data and end-use variables. In the history, PJM starts with metered load and then reconstitutes total load with load-management addbacks, load drops associated with peak-shaving programs, and distributed solar generation estimates.

This report presents an independent load forecast prepared by PJM staff. The load forecast process considers residential, commercial and industrial sectors, each with its own set of models and inputs, including input variables for end-use saturation and efficiency as well as for economic drivers.

Insights from this process, combined with data on historical weather, are the starting point for determining peak and energy forecasts. PJM staff then makes adjustments based on forecast growth in behind-the-meter solar generation, battery storage and plug-in EVs, and also considers information from electric distribution companies on non-modeled trends, such as data centers. The forecast also took into account the New Jersey Order on Electrification.

Learn more on the [Load Forecast Development Process](#) page.

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From: Quinn, Brian M.
Sent: Wednesday, January 29, 2025 11:59 AM
To: 'West, Chris Senator' <Chris.West@senate.state.md.us>
Subject: PJM - 2025 load forecast

Senator,

Nice to see you the other day. PJM released its 2025 load forecast last Friday.

The 2030 load projection is 9.9% higher than what they projected just last year.

By way of comparison, PJM's current installed generation capacity is approximately 180 GW. PJM now predicting they will need another 31 GW by 2030 (across the footprint).

The forecast is available on the website.

<https://www.pjm.com/planning/resource-adequacy-planning/load-forecast-dev-process>

More details to come when the official press release is available. I will send as soon as I see it.

Thanks

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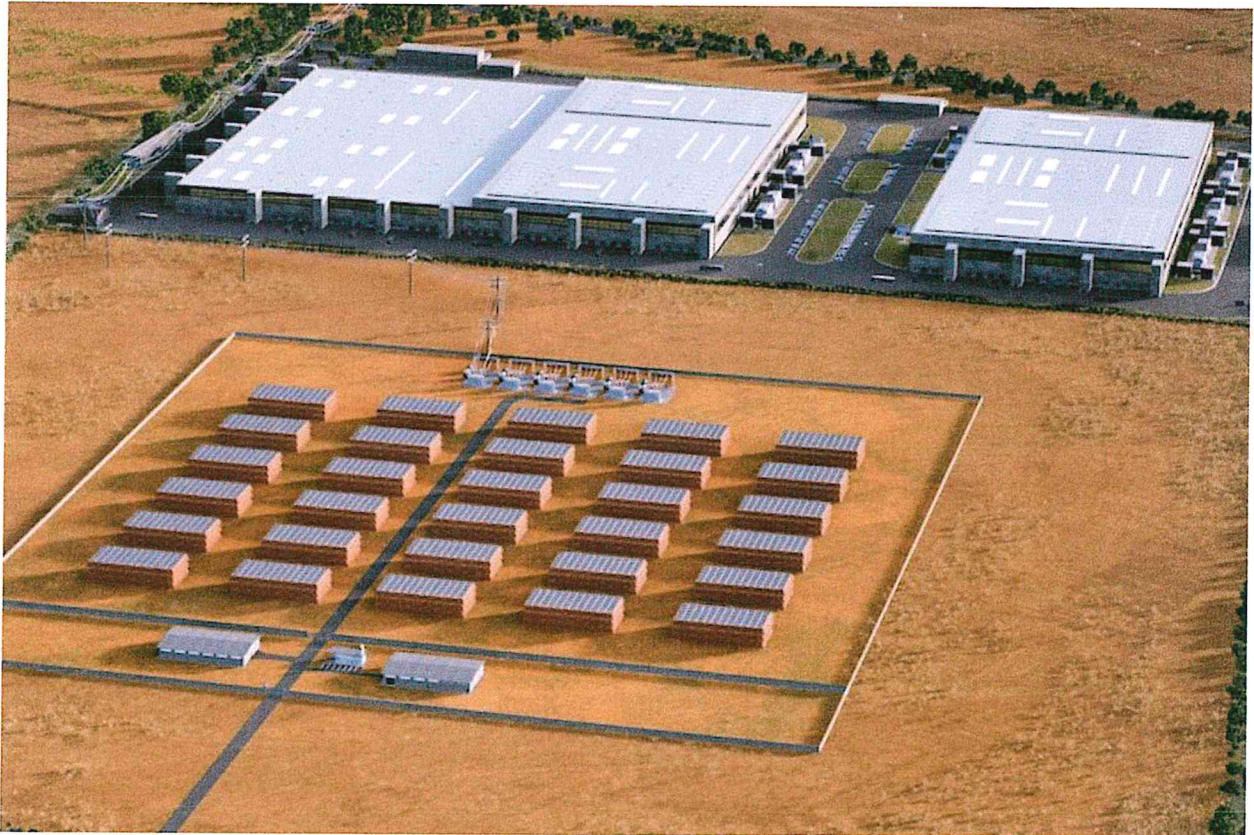
Feb. 28, 2025

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Updated 8:18 a.m. CST

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2 min. read



A rendering of Last Energy's micronuclear reactors planned for Haskell County, Texas.(Last Energy / Last Energy)

Last Energy plans to plant 30 micronuclear facilities in Haskell County, as energy companies move to address the voracious power needs of [data centers](#) fueling the artificial intelligence boom.

The nuclear technology startup announced Friday that it plans to break ground at a 200-acre site in Haskell, a town nearly 180 miles west of Dallas.

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[Microreactors](#) are smaller nuclear plants that can generate electricity and heat for industrial applications — which are booming alongside North Texas' expanding population and economy.

Washington, D.C.-based Last Energy, which already has two micronuclear prototypes in Texas, has applied for a grid connection with the Electric Reliability Council of Texas (ERCOT). It plans to file for a permit with the U.S. Nuclear Regulatory Commission, the firm said in a statement.

Matthew McKinzie, senior director of data and policy at the Science Office of the nonprofit Natural Resources Defense Council, sounded a more cautionary, skeptical note on SMRs.

"The most important thing to know about SMRs is that they don't exist in a commercially viable way," he said. "There is no real-world data on the performance of SMRs, as none have been manufactured at scale."

SMRs are at an economic disadvantage due to their lower power output compared with traditional reactors, McKinzie said. That results in less revenue for the owning utility while the cost of construction is not similarly proportionally smaller.

"For SMRs to play any role in the future, the technology must address concerns around cost, environmental radiation, nuclear waste and nuclear weapons proliferation," he said. "Absent meeting these challenges, the technology is unlikely to succeed."

But Holtec's Springman on Tuesday at the Palisades ceremony sounded a far more optimistic tone.

"Just as we did for the restart, I am proud that our company, our team and our partners are willing to raise our hands: 'We will go first.' "

NEWS / TECH / CLIMATE

Bill Gates' nuclear energy startup inks new data center deal / Tech companies are flocking to nuclear energy to power their data centers.

By **Justine Calma**, a senior science reporter covering energy and the environment with more than a decade of experience. She is also the host of **Hell or High Water: When Disaster Hits Home**, a podcast from Vox Media and Audible Originals.

Jan 23, 2025, 3:27 PM EST

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A screenshot from a video of TerraPower's groundbreaking ceremony for its demonstration project in Wyoming.

TerraPower, a nuclear energy startup founded by Bill Gates, struck a deal this week with one of the largest data center developers in the US to deploy advanced nuclear reactors. TerraPower and Sabey Data

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Tech companies are scrambling to determine where to get all the electricity they'll need for energy-hungry AI data centers that are putting growing pressure on power grids. They're increasingly turning to nuclear energy, including next-generation reactors that startups like TerraPower are developing.

"The energy sector is transforming at an unprecedented pace."

"The energy sector is transforming at an unprecedented pace after decades of business as usual, and meaningful progress will require strategic

collaboration across industries," TerraPower President and CEO Chris Levesque said in a press release.

A memorandum of understanding signed by the two companies establishes a "strategic collaboration" that'll initially look into the potential for new nuclear power plants in Texas and the Rocky Mountain region that would power SDC's data centers.

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There's still a long road ahead before that can become a reality. The technology TerraPower and similar nuclear energy startups are developing still have to make it through regulatory hurdles and prove that they can be commercially viable.

Compared to older, larger nuclear power plants, the next generation of reactors are supposed to be smaller and easier to site. Nuclear energy is seen as an alternative to fossil fuels that are causing climate change. But it still faces opposition from some advocates concerned about the impact of uranium mining and storing radioactive waste near communities.

"I'm a big believer that nuclear energy can help us solve the climate problem, which is very, very important. There are designs that, in terms

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TerraPower's reactor design for this collaboration, Sodium, is the only advanced technology of its kind with a construction permit application for a commercial reactor pending with the U.S. Nuclear Regulatory Commission, according to the company. The company just broke ground on a demonstration project in Wyoming last year, and expects it to come online in 2030.

5 years away

Electricity demand from data centers has tripled over the past decade, according to the Lawrence Berkeley National Laboratory (LBNL). That demand is only expected to grow with the rise of AI, a trend that could prolong the lives of aging fossil fuel power plants and revive retired nuclear plants.

Microsoft made a deal in September to help restart a retired reactor at Three Mile Island. Both Google and Amazon, meanwhile, announced plans last year to support the development of advanced reactors to power their data centers.

5 COMMENTS (5 NEW)

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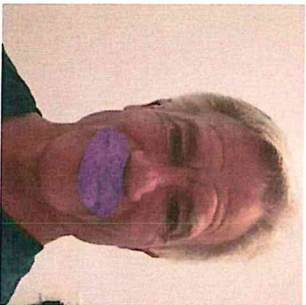

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