OhmAnalytics

2025 VPP MARKET REPORT EXECUTIVE SUMMARY

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About the Report

Ohm Analytics' VPP Market Report contains detailed analysis of the residential and commercial and industrial virtual power plant (VPP) market, covering enrolled capacity, market share by technology and provider, policy developments, and key market trends.

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About Ohm Analytics

Ohm Analytics is the market intelligence platform for the distributed energy resource industry, covering solar, energy storage, EV charging, home electrification, and virtual power plants. The company's Distributed Energy Data Platform aggregates project-level data from over 3,000 sources to track DER market volume, growth, pricing, financing, and equipment trends across the United States. The platform is used by over 600 of the industry's leading OEMs, financiers, developers/installers, distributors, software companies, and utilities.

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Data Partners

Ohm Analytics is the independent source of truth for market intelligence, driving transparency and supporting the adoption of DERs. We appreciate the industry partners that participated in this report by sharing data. Please reach out to learn more about becoming a data partner for future reports.

Executive Summary

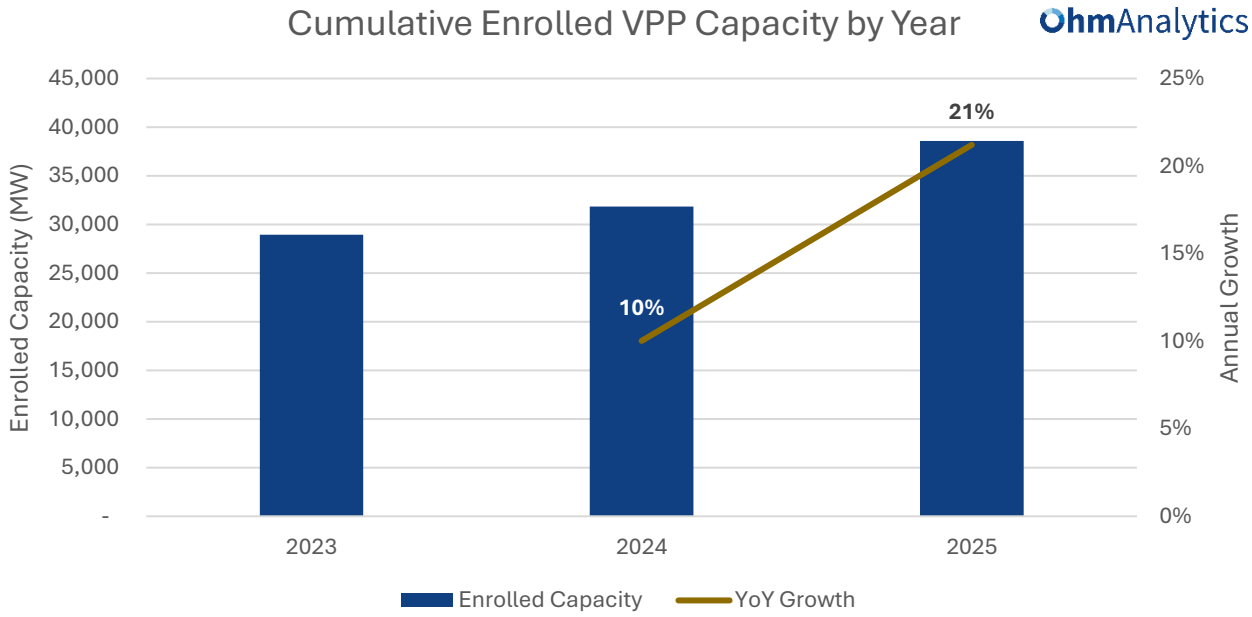
Key Themes:

- Residential battery enrollments in VPPs grew 153% YoY, driven by auto-enrollment in LUMA CBES+ and a major increase in DSGS enrollments. However, only 45% of total deployed residential BESS capacity is enrolled in a VPP.
- Growth in enrolled capacity of smart thermostats in traditional programs has plateaued to 4% YoY in 2025. Residential and C&I battery enrollments will play a crucial role in scaling VPPs as utilities target distribution system relief services. This is highlighted by the 22% YoY increase in the number of live VPP programs leveraging storage in 2025.
- Over 150 actions were taken by utilities, regulators, and legislators to promote VPPs in 2025. We tracked over 75 major electric rate cases (rate increase of 5%+) that were filed or approved in 2025. As demand is increasing due to data center construction, VPPs are being used as a tool to address energy affordability concerns.
- Continued funding and scaling beyond pilots is mission-critical to the success of VPPs. In 2025, 55% of residential BESS VPPs were permanently funded (transitioned from a pilot to a multi-year funded program), a 5% increase from 2024. Despite this shift from the pilot phase, cuts to programs like DSGS are a significant headwind to the industry.

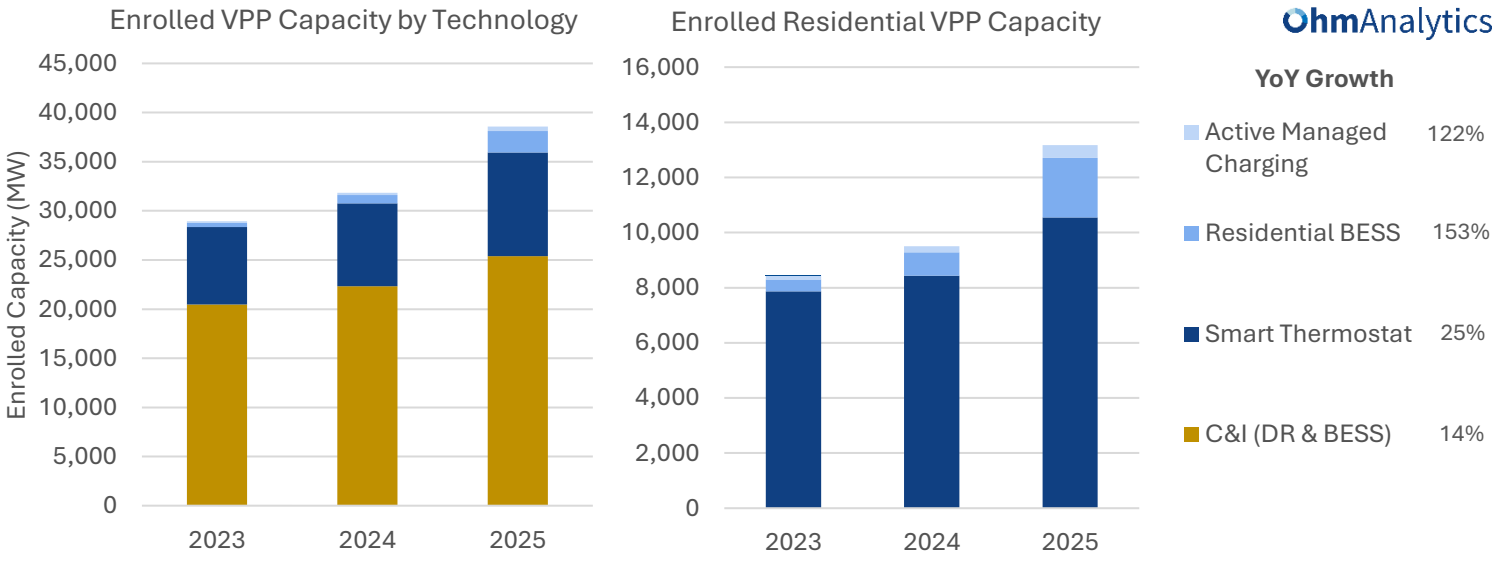
Introduction:

In 2025, major shifts in electricity markets and the federal policy landscape continued to strengthen the value proposition of virtual power plants and drove significant growth in capacity (+21% YoY). The AI and data center boom combined with the retirement of fossil fuel power plants led to shrinking capacity margins, highlighted by record-setting prices in PJM and increasing concerns about affordability. Simultaneously, policy changes at the federal level significantly reduced incentives for renewables and are forecasted to slow the buildout of renewable

energy resources. Throughout these shifts in the U.S. energy market, VPPs continued to deploy capacity faster and at a lower cost than fossil-fueled generation. In 2025, VPP capacity in the U.S. grew 21% YoY, with 38.6 GW currently enrolled. This growth can be largely attributed to capacity additions in traditional C&I programs, which increased 14% YoY and account for 66% of enrolled capacity. Residential battery programs, which increased 153% YoY to 2.2 GW of enrolled capacity, also supported cumulative growth.

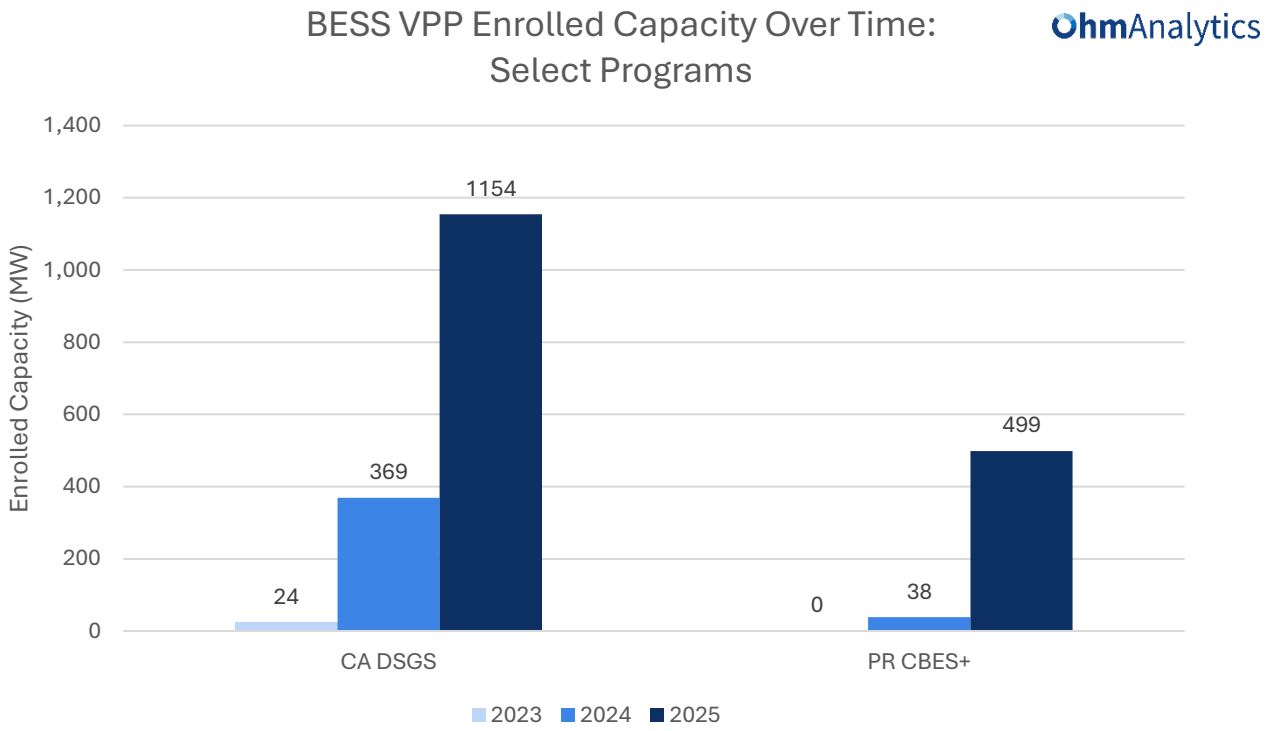


Source: Market buildup of enrolled capacity by segment using OEM, software provider, and aggregator enrolled capacity from self-reported, public, and proprietary Ohm Analytics data sources.



BESS Enrollments Grew 153% in 2025 and will be a Key Component of Scaling VPP Capacity:

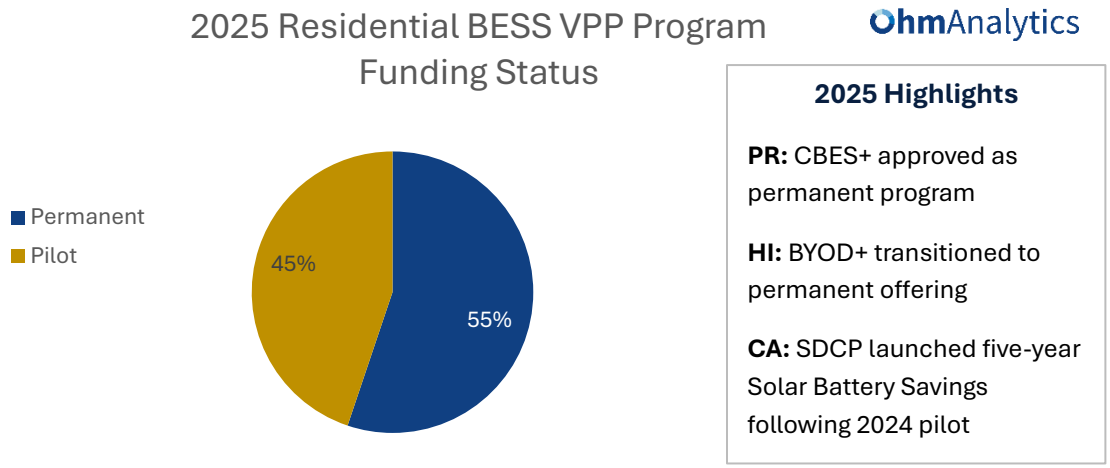
Residential battery VPP enrolled capacity increased 153% YoY in 2025, driven primarily by exponential growth in the CBES+ (Customer Battery Energy Sharing) program in Puerto Rico and in the DSGS (Demand-Side Grid Support) program in California. The Puerto Rico Energy Bureau approved auto-enrollment of battery systems in summer 2025 for the CBES+ program. This allowed LUMA to leverage an additional 460 MW of latent BESS capacity, a 1,212% annual increase, highlighting the value of auto-enrollment to scaling programs. Despite the growth in 2025, barriers remain for scaling battery VPP capacity, including integrating into utility system planning, securing long-term funding, and enhancing coordination between OEMs, TPO providers, aggregators, and utilities.



Stability of Programs is Crucial to Maintaining Market Growth:

Across the industry, our channel has indicated that program stability and longevity are the most important factors in enabling success of VPPs. California, the state with the most VPP capacity, faced setbacks in recent months with its DSGS program – the largest VPP nationally with over 1,465 MW enrolled. Citing a large state budget deficit, funding for DSGS was stripped after the 2025 season. After three successful years of the program, the suspension concerns aggregators and market participants alike. A relatively mild summer in California with no major capacity shortfalls may have led some to believe that programs like DSGS are not essential, especially in the face of a $12 billion budget deficit. In reality, the DSGS program was dispatched 16 times in 2024 and multiple times throughout the summer of 2025 as well.

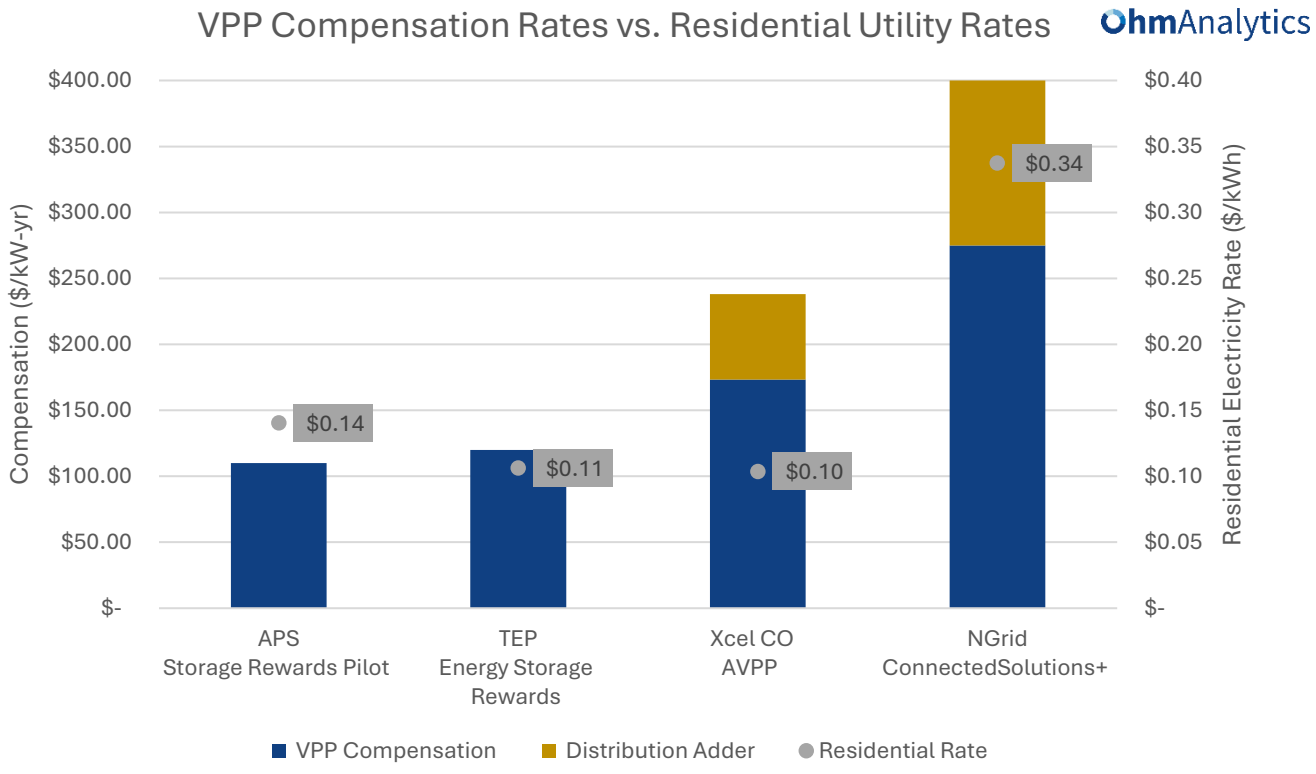
Maryland is also developing a state-wide VPP pilot, as mandated by the DRIVE Act of 2024, but the Public Service Commission is tasking investor-owned utilities with implementation. Their proposals are currently under review by the PSC. Like the majority of VPP programs in the U.S., the Maryland programs will be funded through cost recovery by each utility. DSGS was unique as the only state-funded VPP program. Originally state-funded to avoid increasing already high utility rates, DSGS was susceptible to legislative revocation of funding. Ratepayer-funded programs like those in development in Maryland can be more insulated and stable for that reason, despite being subject to regulatory scrutiny to justify cost recovery. With capacity currently limited to 2% of each utility's highest coincident peak demand, the key test in Maryland will be scaling the pilot programs into permanent offerings.



2025 saw progress on pilot programs transitioning to permanent, with the number of permanent residential BESS VPPs growing 5% from 2024, and permanent programs comprising 55% of all residential BESS VPPs.

Increasing Interest in Valuation of Distribution System Relief, Implementation is in Early Stages:

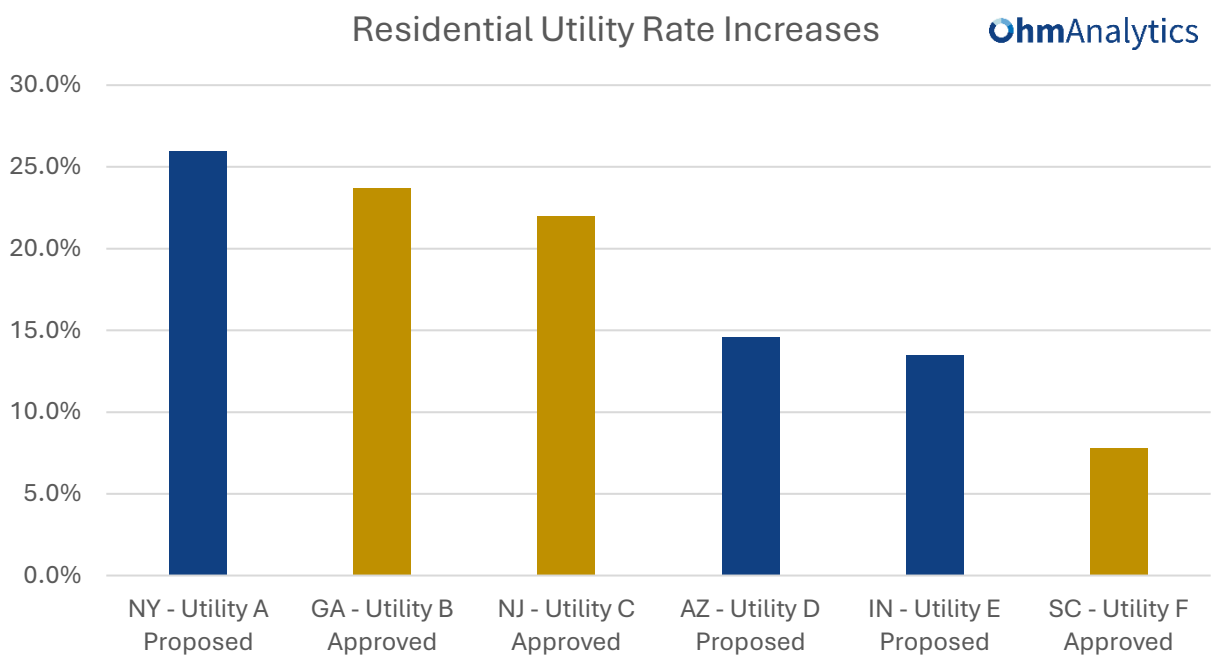
There is an increasing focus on how to compensate DERs that are providing distribution system relief. As BESS deployments grow, targeted deployment of energy storage within the distribution system is an ideal way to defer infrastructure upgrades. In Vermont, Green Mountain Power's Zero Outages Initiative has deployed grid-scale and residential batteries to provide backup power during outages instead of system upgrades which would be significantly more expensive. Factoring DER deployment into system planning is a crucial first step, but we have heard from system planning teams that sufficient distribution of assets remains a concern. One utility team told us that it had to open its BESS VPP pilot to its entire service territory because it did not have an adequate concentration of batteries to provide distribution system relief as originally intended.

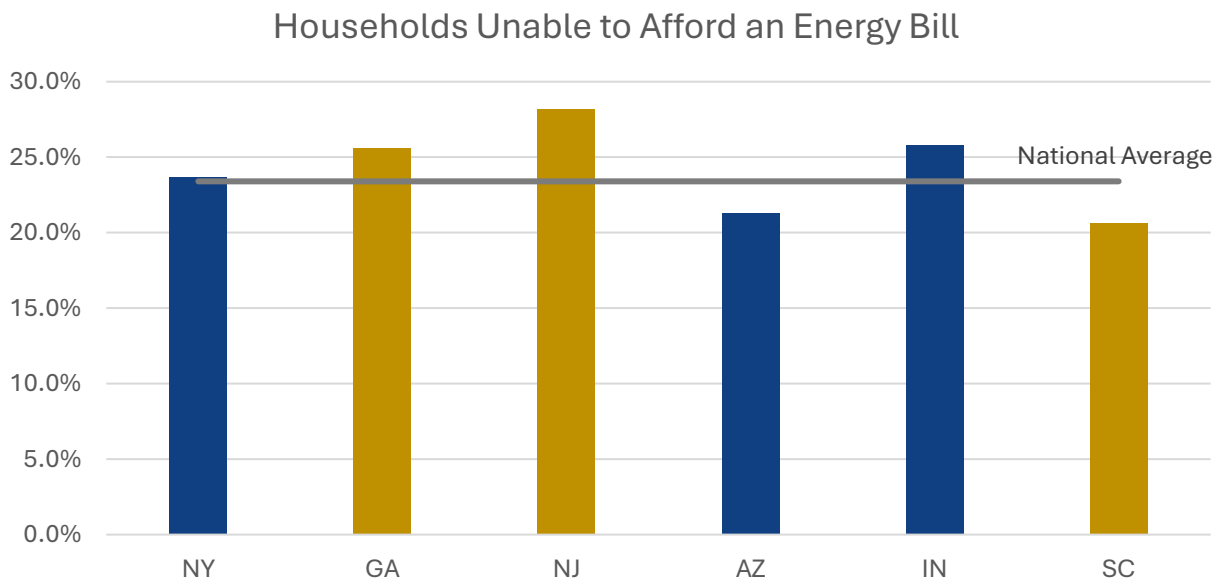


From a program-design standpoint, the utility needs to send a strong enough price signal to project developers to encourage DER deployment in specific areas of the distribution system. Launched in fall 2025, National Grid's ConnectedSolutions+ is the first VPP to offer additional compensation for DERs located in capacity-constrained areas. As part of a pilot for non-wires alternatives in its Electric Sector Modernization Plan, National Grid is offering up to $125/kW-year in additional compensation for batteries located on specific feeders. Xcel Energy's recently approved Aggregated Virtual Power Plant (AVPP) initiative in Colorado also factors in distribution system asset deferral in its incentive structure. Xcel will offer an avoided cost value of $64.74/kW-year for distribution level services, if the DER is located on an eligible feeder, in addition to compensation for generation and transmission avoided costs.

VPPs Increasingly Seen as a Solution to Affordability Issues and Data Center Load Growth:

Data centers, grid hardening, and to a lesser extent transportation and heating electrification, are driving load growth in the U.S. for the first time in almost two decades. At the same time, there were over 75 major (rate increase of 5%+) electric rate cases filed or approved in 2025, and PJM capacity prices are increasing 1,000% from June 2024 to June 2026. This has exacerbated concerns about affordability, with rising utility rates playing a large role in recent state elections and legislative sessions. In New Jersey and Virginia, energy affordability was a key talking point in the recent Governors' races. Maryland passed the aforementioned legislation in 2024 requiring small-scale VPP pilot development, and Virginia also passed legislation in 2025 requiring Dominion to create a 450 MW VPP pilot. Outside of PJM, two incumbent Public Service Commissioners in Georgia were unseated by their challengers in statewide elections, largely due to increasing electricity rates related to construction of new reactors at Georgia Power's Vogtle nuclear plant.





Source: Ohm Analyitcs Rate Case Tracking and U.S. Census Bureau.

VPP providers are now making the case that they can scale capacity significantly faster and cheaper than constructing new power plants to meet growing demand. With advanced asset management, a VPP can even be more capable and adaptable than a traditional power plant due to dispatch flexibility. As data center activity increases and VPPs become more sophisticated, we expect to see diverse new VPPs introduced to address affordability concerns.

In PJM and across the Midwest, where there are high concentrations of data centers, there were 18 new VPP programs proposed by utilities in 2025. Many of the proposed programs would leverage multiple technology types across residential and C&I segments to help offset a projected 100+ GW increase in data center demand by 2035. C&I aggregators such as Voltus are also working to create novel solutions for data centers to provide their own capacity when available grid power is limited.