Fast-tracking 153GW of New Capacity Using Existing Grid with $31B Savings

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The Challenge

- **Unprecedented Demand Surge Driven by Data Centers:** PJM's electricity demand is projected to surge by 30 GW by 2030, an unprecedented rate of growth. This is overwhelmingly driven by data centers, which are projected to add 17.2 GW of new load and position PJM to host nearly half of all U.S. data center capacity by 2030.
- **Gas Supply Chain Bottlenecks:** Conventional solutions like natural gas plants are hampered by significant supply chain constraints. New gas plants ordered now are unlikely to be operational before 2030-2032.
- **Gridlock in the Interconnection Queue:** Low-cost renewable energy projects that could help meet demand face excessive 3-4 year delays for grid connections, with 167 GW of clean capacity currently stranded in the interconnection queue.
- **Looming Capacity Shortfall:** PJM faces a potential 25.1 GW capacity shortfall by 2030. This gap emerges from a projected 32 GW increase in peak load and 8 GW of retiring generation, which is not being met by the 5.6 GW of realistic additions from the queue and 9.3 GW from the RRI fast-track initiative.

The Solution

- **Unlocking Idle Grid Connections:** 52 GW of PJM's thermal capacity operates below 15% capacity factor, severely underutilizing their interconnections and transmission infrastructure. Similarly, solar plants (19%) and wind plants (16%) use only a fraction of their available grid connections.
- **Bypassing the Queue:** Deploying new generation and storage at these existing, underutilized points of interconnection can provide cost-effective energy and capacity without building new transmission infrastructure, bypassing the congested queues.
- **Massive Clean Energy Potential:** PJM can add 153 GW of clean energy capacity through surplus interconnection, including 102 GW of solar, 28 GW of wind, and 24 GW of energy storage at existing power plant sites.
- **Meeting Future Demand:** This surplus potential can provide 13.6 GW of firm peak capacity (meeting 46% of projected 2030 peak demand growth) and 288 TWh of annual energy (covering 108% of projected energy demand growth), while dramatically accelerating deployment timelines from 5-7 years to 1-2 years.

Policy Recommendations

- **Standardize Commercial Agreements:** PJM should create a pro forma Surplus Interconnection Service Agreement, modeled on MISO's "Energy Displacement Agreement," to reduce transaction costs and streamline negotiations between unaffiliated parties.
- **Provide a Path to Permanent Interconnection:** FERC and PJM must eliminate the "one-year cliff" investment risk for repowering projects by creating a clear pathway for a surplus user to obtain permanent interconnection rights when a host generator retires.
- **Increase Market Transparency on Grid Opportunities:** PJM should enhance market transparency by providing tools that help developers identify locations with significant underutilized grid capacity.
- **Improve Hybrid Resource Valuation:** PJM should reform its Effective Load Carrying Capability (ELCC) methodology to accurately value the reliability contributions of co-located hybrid resources, ensuring proper compensation in the capacity market and incentivizing their deployment.

Key Impact Metrics

153 GW
New Clean Energy Capacity Available Through Existing Infrastructure

1-2 yrs
Accelerated Project Timeline vs. 5-7 Years for New Interconnections

$31B
Direct Cost Savings from Avoiding New Transmission Infrastructure

Explore Interactive Data Dashboard

Discover plant-level surplus capacity for each power plant in PJM, view state-level results, explore renewable potential near plants, and cost competitiveness data

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