Accelerating 21GW of New Capacity in Virginia Using Existing Grid with $1.8B Savings

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The Challenge

- **Data Center Demand Surge:** Data centers drive 87% of Dominion's projected load growth, with demand expected to double by 2039. Northern Virginia is the world's largest data center market, but extended interconnection timelines (6+ years average) limit competitiveness for these high-value investments seeking speed-to-power.
- **Gridlock in Interconnection Queues:** Virginia has ~8 GW of projects in PJM interconnection queue (Dominion zone), with average wait times exceeding 6 years—Active projects average 6.2 years in queue, while projects Under Construction have waited 7.4 years on average.
- **Skyrocketing Capacity Prices:** Capacity market prices have surged dramatically: PJM Dominion Zone hit $444.26/MW-day for 2025/26 (65% above RTO average), and 2026/27 reached the price cap at $329.17/MW-day (11.4× increase from 2024/25 baseline of $28.92/MW-day).
- **Gas Plant Supply Chain Constraints:** New gas plants ordered today won't come online until 2030-2031 at earliest, with capital costs surging from $1,116-1,427/kW to over $2,000/kW for recent combined-cycle projects (GridLab, 2025).

The Solution

- **Unlocking Idle Grid Connections:** 10.7 GW of Virginia's thermal capacity (61%) operates at less than 15% capacity factor, with 68% operating below 30% CF. Similarly, solar plants (16.6% CF) severely underutilize their interconnections, leaving expensive grid infrastructure idle most of the time.
- **Bypassing the Queue:** Deployment of new generation at these existing underutilized plants can provide cost-effective energy and capacity without building new transmission infrastructure, bypassing lengthy interconnection queues.
- **Massive Clean Energy Potential:** Virginia can add 21 GW of clean energy capacity through surplus interconnection: 12.4 GW solar + 4.1 GW wind + 4.5 GW storage. This includes 8 GW at thermal plants and 13 GW at existing renewable plants through co-location of complementary resources.
- **Rapid Deployment:** Surplus interconnection can save $1.8 billion in interconnection costs, equivalent to ~$529 per Virginia household. Projects can be completed in 12-18 months compared to 6+ years for standard queue projects.

Policy Recommendations

- **Evaluate SIS Potential:** Require the Virginia SCC and utilities to evaluate surplus interconnection potential in Integrated Resource Plans—identifying which existing plants offer the best opportunities for co-location of solar, wind, and storage resources.
- **Develop Procurement Mechanisms:** Develop procurement mechanisms for surplus interconnection projects, including RFPs for specific plant sites and Purchase and Sale Agreement structures to enable third-party development at utility-owned facilities.
- **Streamline Permitting:** Streamline land permitting near existing thermal sites. Projects co-located at existing generation facilities have inherently lower land-use and environmental impacts and should qualify for expedited approval pathways.
- **Prioritize Before Greenfield:** Require evaluation of surplus interconnection opportunities before approving new greenfield generation capacity. Co-location at existing sites saves transmission costs and accelerates deployment compared to building new infrastructure.

Key Impact Metrics

21 GW
New Clean Energy Capacity Available Through Existing Infrastructure

12-18 mo
Accelerated Project Timeline vs. 6+ Years for New Interconnections

$1.8B
Direct Cost Savings from Avoiding New Transmission Infrastructure

Explore Interactive Data Dashboard

Explore surplus capacity potential, site development opportunities, renewable resource quality, and economic competitiveness for each Virginia plant.

Visit Dashboard