

Virginia's power demand is set to double in a decade. Your capital plan is where that gets built.

The world's largest data-center market is stacking gigawatts of new load onto Dominion's grid, just as the Clean Economy Act pushes toward a 2045 carbon-free deadline and offshore wind adds a \$10.7 billion program. Every one of those forces reshuffles the projects on your list. Invizion helps electric utilities re-sequence a capital portfolio in a click — and defend every decision.

2x¹ Virginia's unconstrained power demand is expected to double within a decade — after running essentially flat from 2006 to 2020.	70%+² Share of the world's internet traffic that flows through Loudoun County's "Data Center Alley."	\$10.7B³ Cost of the 2.6 GW Coastal Virginia Offshore Wind project — the largest in the United States.	5.5%¹ Annual load growth in Dominion's transmission zone, driven largely by data centers.
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THE VIRGINIA LANDSCAPE

Four forces are moving your project list at once

None of these is theoretical, and none of them waits for your next budget cycle. Together they mean the capital plan you approved last year may already be the wrong plan.

DEMAND — LOAD GROWTH

The world's data-center capital, arriving on your grid

Dominion's transmission zone is growing about 5.5% a year, and JLARC's independent forecast finds Virginia's unconstrained power demand could double within a decade — after running essentially flat from 2006 to 2020¹

The driver is data centers: Virginia hosts more than 640 facilities and roughly 40% of the global market, with over 70% of the world's internet traffic crossing Loudoun's "Data Center Alley."⁴² Every hyperscale campus is a multi-hundred-megawatt commitment competing for the same capital as Dominion serves its 2.5 million Virginia customers.⁵

RELIABILITY — RESOURCE ADEQUACY

Load growing faster than the grid can absorb

Meeting that load isn't only a generation problem. JLARC estimates the unconstrained forecast would need roughly 3,500 MW of new interzonal transmission and up to 73 TWh of imported energy a year to stay reliable through 2040¹

Virginia already generates about 103 million MWh a year, and the PJM system it sits inside is absorbing Mid-Atlantic load growth all at once — thinning the margin whenever projects slip⁶

GENERATION — THE TRANSITION

A 2045 clean deadline, on a capital clock

The Virginia Clean Economy Act requires Dominion to be 100% carbon-free by 2045 and Appalachian Power by 2050 — the nation's first legally binding 100% clean-energy standard⁷

That mandate is landing as a capital wave: the 2.6 GW, \$10.7 billion Coastal Virginia Offshore Wind project — three roughly 880 MW phases serving 650,000-plus customers³³ and up to 660,000 homes' worth of power⁸ — plus the roughly 56,300 MW of new generation JLARC says the unconstrained forecast would require by 2040.³¹

CAPITAL — GRID & TRANSMISSION

Build generation and the wires, at the same time

Offshore wind alone is a \$10.7 billion program, up from an initial \$9.8 billion after interconnection and export-cable cost increases.³ On top of generation, JLARC projects a typical Dominion household's grid-related costs could rise \$14–\$37 a month by 2040 as transmission builds out¹

Federal dollars help at the margin — DOE's GRIP program is sending up to \$250 million to a TVA-led project spanning parts of Virginia — but the backlog stacks faster than the grants¹²

WHO RUNS VIRGINIA'S GRID

Two big investor-owned utilities, a large cooperative sector, and municipals

Virginia's grid is carried by two SCC-regulated investor-owned utilities, a wholesale generation-and-transmission cooperative and its distribution members, and a set of city-owned systems. The pressures are shared; the accountability path differs.

Investor-owned utilities

Rates & capital recovery regulated by the SCC

Dominion Energy Virginia More than 2.5M customers in
Virginia

Appalachian Power (AEP) ~1.1M customers across VA / WV /
TN; ~8,750 MW generation

Old Dominion Power Small IOU serving far southwest
(Kentucky Utilities / PPL) Virginia

Dominion's flagship capital program includes the \$10.7 billion
Coastal Virginia Offshore Wind project.

Cooperatives & municipal power

Governed by boards & members, not SCC base rates

Old Dominion Electric Wholesale G&T for 11 member
Cooperative (ODEC) coops · ~1.5M people
(VA/MD/DE)

Northern Virginia Electric Serves the fast-growing
Cooperative (NOVEC) Northern Virginia data-center
corridor

Rappahannock, BARC & other Member-governed distribution
distribution coops cooperatives

Municipal systems (Danville, City-owned electric utilities
Manassas, Bristol,
Harrisonburg)

Every capital dollar has to be defensible

Whether you answer to the State Corporation Commission or a member board, the question is the same: why this project, why now, why at this cost?

State Corporation Commission (SCC) regulates base rates, capital recovery, and Integrated Resource Plans for Dominion Energy Virginia and Appalachian Power¹¹

2023 rate-review reform (SB 1265 / HB 1770) restructured Dominion's oversight — following the 2015 SB 1349 freeze that had blocked the SCC from reviewing base rates until 2021 — moving the utility back toward regular biennial reviews¹¹

VCEA-driven IRPs require Dominion (100% carbon-free by 2045) and Appalachian Power (by 2050) to file resource plans aligned with the state's clean-energy mandate⁷

Appalachian Power, an AEP subsidiary serving about 1.1 million customers, files its own rate cases and resource plan with the SCC⁹

The money is moving — can your plan absorb it?

Virginia utilities have more grid capital in motion than in a generation. The constraint is readiness: which projects qualify, which are shovel-ready, and how the timing lines up against a decade of load growth.

Coastal Virginia Offshore Wind — \$10.7B VCEA-driven capital program for 2.6 GW across 176 turbines, in service around 2026–2027, with an estimated \$3 billion in first-decade fuel savings^{3 8}

DOE GRIP — up to \$250M (TVA-led) grid-resilience funding spanning parts of Virginia and seven other states¹²

IRA direct-pay tax credits put utility-scale solar and storage in reach for public power and cooperatives such as ODEC and NOVEC.

Data-center sales-tax exemption — \$928M (FY23) in state savings underscores the scale of the load reshaping capital plans, and the cost-allocation debate behind every new line¹

VIRGINIA'S GRID, IN BRIEF

Questions Virginia utility leaders are asking

Short, sourced answers — the same facts we dig into with utilities looking at their capital programs.

How fast is Virginia's electricity demand growing?

JLARC's independent forecast finds Virginia's unconstrained power demand could double within a decade, with Dominion's transmission zone already growing about 5.5% a year — a reversal after demand ran flat from 2006 to 2020. Data centers, roughly 40% of the global market, are the main driver¹⁴

Why is Virginia the center of data-center growth?

Northern Virginia holds the world's largest concentration of data centers — over 70% of the world's internet traffic flows through Loudoun's "Data Center Alley," and Virginia hosts more than 640 facilities statewide²⁴

What is the Virginia Clean Economy Act?

The 2020 VCEA is the nation's first legally binding 100% clean-energy standard. It requires Dominion Energy Virginia to be 100% carbon-free by 2045 and Appalachian Power by 2050.⁷

What is Coastal Virginia Offshore Wind?

Dominion's 2.6 GW, 176-turbine offshore wind project — the largest in the U.S. — is expected to power up to 660,000 homes, in service around 2026–2027, at a cost of \$10.7 billion.³⁸

Who regulates Virginia electric utilities' rates?

The State Corporation Commission regulates base rates and resource plans for Dominion Energy Virginia and Appalachian Power. A 2023 reform (SB 1265 / HB 1770) restructured Dominion's oversight after the 2015 freeze that had suspended SCC base-rate reviews until 2021. Cooperatives such as ODEC and NOVEC are governed by member boards.¹¹⁰

How does Invizion help Virginia electric utilities plan capital?

Invizion is scenario-based capital portfolio optimization for utilities. It lets you model how a data-center load surge, an offshore-wind cost increase, a grant, or a VCEA milestone reshuffles your whole project list, re-sequence the portfolio automatically, and keep a defensible record of every decision for the SCC or your board.

REFERENCES

Sources

Every figure in this briefing is tied to a primary or authoritative source.

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13. Dominion Energy — Coastal Virginia Offshore Wind: more than 2,600 MW across three ~880 MW phases, expected to serve more than 650,000 customers. www.dominionenergy.com

ABOUT INVIZION

Capital program optimization for utilities

Invizion is a purpose-built capital lifecycle management platform for utilities. It integrates budgeting, CIP, scenario analysis, and funding-source tracking in one system — so utilities can re-sequence a capital portfolio in a click and demonstrate audit-ready, defensible decisions to regulators, boards, and rating agencies.

See how utilities keep capital plans current and defensible with Invizion.

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