

2024 Dominion Energy's Integrated Resource Plan

Key Implications for Virginia

Summary

Dominion Energy's 2024 Integrated Resource Plan (IRP) lays out the utility's roadmap for meeting Virginia's energy needs through 2039. The plan includes significant investments in gas infrastructure and nuclear power and emphasizes the central role of data centers in driving energy demand growth and associated cost increases.

Background

The Virginia State Corporation Commission (SCC) has not accepted Dominion's recent IRP submissions, citing issues with inadequate modeling and noncompliance with state law. These same issues appear in the 2024 IRP, which continues to prioritize gas and nuclear generation over more cost-effective energy solutions.

Dominion's 2024 IRP includes four options for meeting demand, which includes extreme load growth from proposed data centers. At the request of the SCC, Dominion supplemented their IRP with modeling scenarios for Options 1 and 3 without data center load growth.

What is an Integrated Resource Plan?

An Integrated Resource Plan (IRP) is a foundational planning tool utilities use to outline strategies for meeting energy demand over the next 15 years.

These plans are based on models shaped by utility-chosen assumptions, making scrutiny vital to ensure IRPs are not used to justify costly investments at the expense of families, businesses and the environment.



Dominion's Proposed Energy Portfolios (by 2039)

	Option 1	Option 2	Option 3	Option 4	Option 1 w/o data centers	Option 3 w/o data centers
Plan cost (billions)	\$100.2	\$93.7	\$102.9	\$97	\$77.2	\$80.8
Solar (MW)	11,932	11,932	12,210	12,210	11,560	12,210
Wind (MW)	3,460	3,460	3,460	3,460	60	60
Storage (MW)	4,577	4,577	4,100	4,100	-	2,250
Nuclear (MW)	1,340	1,340	1,340	1,340	-	-
Gas-fired (MW)	5,934	5,934	5,934	5,934	3,398	2,580
Retirements	None	None	None	None	None	None
CO2 (metric tons)	19.6 M	25 M	19.3 M	24.6 M	Not modeled	Not modeled

Key concerns



High costs and rising bills: Dominion's proposed plans require significant investments to meet data center demand, with total cost estimates of up to \$103 billion.¹ For residential consumers using 1,000 kWh per month, this translates to projected monthly bills between \$214 and \$315—a sharp increase from the 2023 average of \$141.63.^{2,3}

Skyrocketing energy demand: Dominion serves the world's largest data center market, fueling an expected 5.5% annual increase in energy demand and doubling overall demand by 2039.⁴ Without data centers, peak demand would grow by only 0.47% annually.⁵

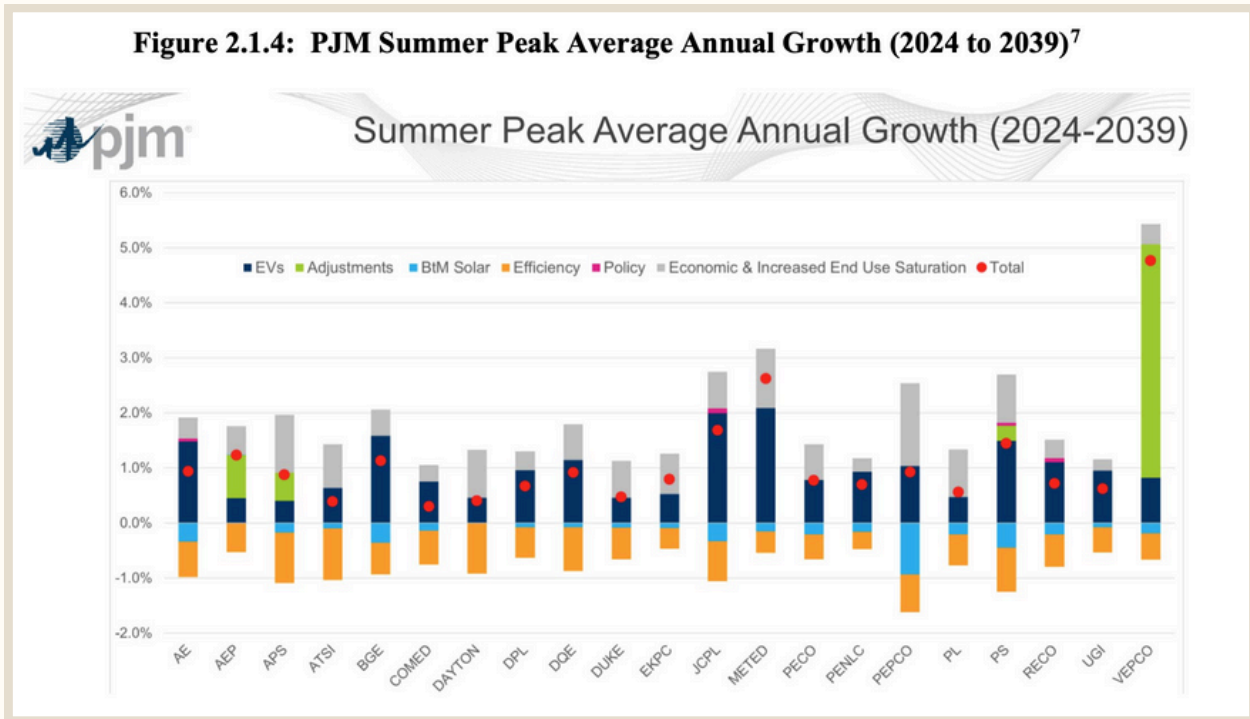


Figure 2.1.4 underscores that data centers (represented by “Adjustments” in green) are the primary driver behind demand growth in VEPCO (Dominion) territory, exceeding gains in efficiency and solar.

Key concerns continued



Expansion of gas-fired generation: Dominion plans to add 5,934 MW of gas-fired generation by 2036, including converting existing coal plants to gas.⁶ The first project in this tranche is a 1000 megawatt gas-fired power plant proposed in Chesterfield County. Gas plants contribute to toxic air pollution linked to serious respiratory and cardiovascular health issues.⁷



Renewables and storage: Renewable energy represents only 30% of total energy supplied by 2039 in the IRP.⁸ Dominion’s chosen modeling method places more value on gas and nuclear, undercutting the potential for renewables and storage technologies to lower costs for families and meet Virginia’s growing energy demand.⁹



Nuclear: Dominion notes the North Anna Units 1 and 2 have license extensions through 2058 and 2060, respectively. The utility is also exploring small modular reactors for potential deployment starting in the mid-2030s. Dominion’s modeling does not propose any new nuclear generation in scenarios without data center-driven demand.¹⁰

Meeting demand with clean, affordable energy

Under current regulations, Dominion Energy's profits are tied to electricity sales and capital expenditures, creating a financial incentive for costly, large-scale projects over more affordable solutions like energy efficiency and distributed generation. This preference is evident in Dominion's 2024 IRP, which emphasizes expensive infrastructure investments rather than strategies that could lower customer bills and reduce health risks.

For instance, Dominion projects substantial carbon dioxide pollution—between 19.3 and 25 million metric tons annually—equivalent to the pollution generated by 4.6 to 6 million gasoline-powered vehicles.^{11,12} Compounding the issue, the State Corporation Commission (SCC) ruled in July 2024 that Dominion is falling short of its energy efficiency targets. This underscores the need to prioritize demand-side solutions, which often cost significantly less than generating new electricity from any source.¹³

What is a demand-side solution?

Demand-side solutions focus on reducing or managing energy use instead of increasing production. Examples include energy efficiency measures, like upgrading appliances, and demand response programs that encourage shifting or reducing energy use during peak times. These strategies lower costs, improve reliability and reduce the need for new infrastructure.

Renewable energy sources like solar and wind, coupled with energy efficiency and grid enhancing technologies and storage, can mitigate the need for costly investments such as gas and nuclear generation. This will not only help the state reduce pollution and costs to families but also position Virginia as a leader in economic growth, job creation and grid modernization.

What legislators can do



Ensure fair cost allocation: Empower the SCC to evaluate and fairly distribute the costs of new demand driven by data centers. Residential energy bills are projected to rise by \$14 to \$37 per month by 2040 due to the infrastructure needed for data centers' energy demand.¹⁴



Enforce existing laws: Ensure utility compliance with the 2020 Virginia Clean Economy Act, which requires Virginia's electric utilities to transition to 100% clean energy by 2045.



Promote energy efficiency: Advocate for stronger incentives for Dominion to meet efficiency targets before approving new infrastructure. Encourage participation from data centers in demand response programs to reduce consumption during peak periods.



Evaluate alternatives fairly: Advocate for a thorough and unbiased evaluation of all energy options, including energy efficiency and grid enhancements.



Reform the IRP process: Support efforts by the Commission on Electric Utility Regulation aimed at reforming the IRP process to include including holistic grid planning, grid enhancing technologies and an improved stakeholder process.¹⁵

Conclusion

Dominion's 2024 Integrated Resource Plan prioritizes expensive infrastructure projects with significant risks to public and environmental health. Legislators must ensure robust oversight and advocate for balanced, cost-effective solutions that emphasize energy efficiency and affordability for all Virginians.

Sources

1. 2024 Dominion Integrated Resource Plan. Page 56. Table 5.1.2.
2. 2024 Dominion Integrated Resource Plan. Page 51. Figure 4.2.1.1.
3. [U.S. Energy Information Administration. 2023 Average Monthly Bill – Residential.](#)
4. 2024 Dominion Integrated Resource Plan. Page 1.
5. Virginia Electric and Power Company’s SCC Directed 2024 IRP Supplement. Page 3. Figure 3.1.
6. 2024 Dominion Integrated Resource Plan. Page 55. Figure 5.1.1.
7. [Power Plants and Neighboring Communities | US EPA](#)
8. 2024 Dominion Integrated Resource Plan. Page 53.
9. Dominion’s 2024 IRP modeling uses Effective Load Carrying Capability criteria. When compared to the 2023 IRP, this changes the value of fixed-tilt solar from 37% to 3%, tracking solar from 55% to 4%, 4-hour battery storage from 82% to 38% and offshore wind from 43% to 20%. 2024 Dominion Integrated Resource Plan. Page 18. Figure 2.2.3.1.
10. Virginia Electric and Power Company’s SCC Directed 2024 IRP Supplement. Page 5. Figure 3.1.
11. 2024 Dominion Integrated Resource Plan. Page 56. Table 5.1.2.
12. [Greenhouse Gas Equivalencies Calculator | US EPA](#)
13. [Virginia State Corporation Commission Final Order. Case No. PUR 2023-2023-00217. July 26, 2024.](#)
14. Joint Legislative Audit and Review Commission. [Data Centers in Virginia.](#) December 9, 2024.
15. Carrie Hearne, Commission on Electric Utility Regulation, [From IRP to ISP: Actions Needed for a Holistic, Transparent and Innovative Planning Process.](#) September 16, 2024.