DATA CENTER SITING & TRANSPARENCY

Corrina Beall // Sierra Club Virginia Chapter // corrina.beall@sierraclub.org
Julie Bolthouse // Piedmont Environmental Council // jbolthouse@pecva.org
Morgan Butler // Southern Environmental Law Center // mbutler@selc.org
Kyle Hart // National Parks Conservation Association // khart@npca.org

WHY IT MATTERS

Virginia hosts the world's largest data center market at over 10 gigawatts (GW) of operational capacity, more than the next four markets combined.[1] That number continues climbing, with data centers growing larger and more energy-intensive to meet the anticipated demand for artificial intelligence (AI). The typical data center campus features multiple warehouse-sized buildings each requiring 60-90 megawatts (~40,000 to 90,000 homes) of power and dozens of backup generators. They also fuel buildout of new transmission lines, power plants, and other significant energy infrastructure. This unprecedented development pressure is damaging natural resources and historic landscapes, impairing public parkland, and industrializing nearby neighborhoods.

Data centers pollute water through stormwater runoff and poorly managed wastewater discharge and can also consume vast amounts of water both directly for cooling purposes and indirectly through the production of energy they require. Cooling "hyperscale" AI data centers will significantly increase water consumption.[2] Further, data centers often use the most water during the hottest and driest parts of the year when water supplies and rivers are already strained, risking serious community and ecological impacts, especially with increased occurrence and duration of droughts *(see Safeguarding Water Supplies, page 5)*.

Local and regional air quality and **greenhouse gas emissions** are also major concerns. Power constraints arising from so many data centers connecting to the grid are driving increased proposals to build polluting gas turbines on-site or use backup diesel generators in non-emergencies.[3] Noise and pollution become greater concerns with the increase in federal emergency orders allowing the use of backup generators and the push to connect data centers to the grid, despite inadequate infrastructure (which will increase these orders' duration and frequency).

Although data centers have brought benefits to some Virginians, the scale and pace of growth have surpassed any measure of sustainability, creating an urgent need for state oversight.

CURRENT LANDSCAPE

Despite already having the world's largest data center market, Virginia continues to experience exponential growth, and the impacts are becoming increasingly unmanageable. Dominion Energy's most recent quarterly shareholder report indicates that it has 51GW of contracted capacity with data centers–an amount that would likely take decades to meet.[4]

Records from the **Virginia Department of Environmental Quality (DEQ)** show data centers in Virginia hold air permits for over 13,000 backup generators, which emit a toxic blend of pollutants that disperse widely from their source.[5] These are permitted through minor air permits that do not require robust review or public hearings. Virginia Commonwealth University published a recent study showing that emissions from generators at clusters of data centers in Northern Virginia in 2024 surpassed the emissions of nearby power plants, and that operating them for just an hour per week has the same public health impact as operating five large gas-fired power plants.[6]

Virginia lacks meaningful state oversight of data center development. Localities often have the only say in approving or rejecting a data center proposal, yet they lack the purview to analyze key impacts to the grid, air quality, and regional water supply. The public is hamstrung in its ability to weigh in on local decision-making by the excessive use of **non-disclosure agreements (NDAs)** and by data centers pushing localities to hide information about impacts under improper exemptions to the **Virginia Freedom of Information Act (VFOIA)**. While the General Assembly's recent adoption of water transparency requirements for existing data centers is a positive step, information on emissions, water, and energy usage should be available before localities can approve them.

OPPORTUNITIES

Although the General Assembly took some important first steps toward data center reform in the 2026 Session, the situation is dire with the 51GW of contracted data center energy demand that, if borne out, could necessitate hundreds of substations, thousands of miles of transmission lines, and dozens of power plants. Data centers are increasingly using on-site diesel generators and **behind-the-meter** gas turbines to access power more quickly.[7] All this infrastructure impacts communities. Dominion has stated it currently has 70GW of data center power requests in its pipeline and receives 2-3GW of more requests each month.[8] The state should strongly consider enacting a temporary pause on new approvals as it develops the robust protections and policies needed to properly plan for, manage, and mitigate impacts.

To the extent data centers continue to be considered, more transparency is needed, particularly around water and energy usage. Inappropriate use of exemptions in VFOIA and use of NDAs conceal

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important information from the public and local leaders in the local application review process. Moreover, local review and permitting is inadequate for addressing impacts on regional air quality, water supplies, and energy infrastructure. A meaningful state-level review process would allow for consideration of broader-scale impacts that typically fall outside the purview of local officials and necessitate review far beyond their local jurisdictional boundaries.

The nearly 13,000 diesel generators that have been approved for data centers bring an unprecedented threat to air quality as the grid becomes increasingly constrained. Virginians need stronger protections including expanded and more publicly accessible air quality monitoring, public notice requirements when generators are running or will be run, and a mandatory transition to cleaner backup power sources like batteries.

TOP TAKEAWAYS

The pace and scale of data center development is overwhelming the grid, communities, and the environment. A pause on further approvals should be considered while we plan, manage, and mitigate impacts of what's already been approved.

Local and state officials and the public need greater transparency up front around the impacts of data center proposals.

State oversight is needed to plan for and mitigate regional and statewide impacts, including pollution from on-site power sources.

ENDNOTES

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