## SPEAK UP & ACT NOW: SHORT GUIDES TO ADDRESS CLIMATE CHANGE[i]

# DATA CENTERS IN VIRGINIA

**QUESTION: What are data centers and how do they contribute to climate change?**

**ANSWER:** Data centers are high tech warehouses full of the servers that hold the data and processing power used for every transaction, social media page, and typical website action. Seventy percent of worldwide internet traffic flows through Virginia every day. Northern Virginia is known as Data Center Alley, housing the majority of Virginia's 539 data centers. More are on the way—a lot more—mostly driven by the massive processing requirements of the rapidly expanding artificial intelligence (AI) industry.

Data centers contribute to climate change because they use a tremendous amount of energy.

- A typical hyperscale data center requires 30 megawatts of power—enough to serve 18,750 homes or 116 large office buildings.
- Recently proposed data centers can require up to three times as much power, approaching 100 megawatts each.
- Data center campuses can demand over 1,000 megawatts of power—more than the output of Virginia's largest nuclear reactor (at 950 megawatts).

If all of this energy came from renewable sources, concerns about climate change would be greatly reduced. But Dominion Energy, Virginia's largest electrical utility, anticipates building up to six new natural gas "peaker" plants in the next 10-15 years. (Natural gas is a fossil fuel that is primarily composed of methane, a potent greenhouse gas.) These natural gas plants will emit a lot of additional greenhouse gases through mid-century—which goes against the Virginia Clean Economy Act (VCEA) passed in 2020.

In addition, data centers create air and noise pollution, use a lot of water, and often take over land used for farming and wildlife habitat.

**The Challenge.** Opponents of the data center boom are up against some powerful forces. Google Cloud alone committed to planned investments of $6 billion in U.S. data centers in the third quarter of 2024. Amazon will invest $150 billion over the next 15 years. But "Silicon Valley oligarchs" are not the only ones in favor. Local communities stand to reap significant economic benefits from data centers such as financing for housing programs, infrastructure support, and spinoff capital investments. Local elected officials have a hard time saying "no" to such a revenue injection for ailing local budgets.

Yet the technology exists to meet our energy demands with renewable sources like solar and wind coupled with infrastructure to store this energy. For example, energy providers like Green Mountain Power (in Vermont), LADWP (in California), and Xcel Energy (in Minnesota) may serve as models for managing Virginia's growing energy needs with renewable energy sources.

## ACTIONS – WHAT CAN WE DO?

Given the reality of data centers and their increasing numbers, we must push the communication and information technology companies that own the data centers to shoulder the responsibility for providing renewable energy commensurate with the amount of energy the centers use.

1. **SUPPORT GREEN ENERGY EXPANSION AND GRID MODERNIZATION (STORAGE, TRANSMISSION, SMART TECHNOLOGIES) AT THE STATE AND LOCAL LEVEL.** Advocate for full implementation of existing laws like VCEA as well as for new legislation such as HB1821, which focuses on accelerating renewable energy development, including energy storage.

2. **JOIN THE DATA CENTER REFORM COALITION.** This coalition urges state lawmakers to study the cumulative effects of data center development on Virginia's electrical grid, water resources, air quality, and land conservation efforts.

3. **CONTACT YOUR GENERAL ASSEMBLY REPRESENTATIVES.** Let them know that you demand transparency about data center impacts and support requiring data centers to use renewable energy sources. Over a dozen bills related to data centers, specifically, were under consideration in the 2025 Virginia General Assembly. To prepare for future General Assembly sessions, use the Virginia Public Access Project's website to find bills related to data centers.

4. **LEARN ABOUT LOCAL ZONING AND BOARD OF SUPERVISORS MEETINGS, THEN SIGN UP TO SPEAK.** Sharing the facts about data center impacts and green energy opportunities can push them to make good choices. Thanks to this kind of advocacy, Loudoun County, which already hosts more than 300 data centers, now requires any new data center proposal to be reviewed by its board of supervisors.

5. **READ THE WORK OF LOCAL ENVIRONMENTAL JOURNALISTS WHO DO SOME REMARKABLE WORK ON ENERGY ISSUES.** Journalists Charlie Paullin and Ivy Main provide pragmatic analysis of climate change challenges and opportunities facing Virginians.

## RESOURCES – WHERE CAN I LEARN MORE?

- Data Centers Across the South, Southern Environmental Law Center
- Virginia Explained: Data Center Expansion, with All Its Challenges and Benefits by Charlie Paullin, *Virginia Mercury* (May 28, 2024)
- Data Centers Are a Hot Topic for Virginia Legislators, Southern Environmental Law Center
- Data Centers in Virginia, Joint Legislative Audit & Review Commission (JLARC)
- The Multifaceted Challenge of Powering AI by Nancy Stauffer, *MIT News* (Jan. 21, 2025)

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[i] Prepared by members of the University of Richmond Osher Special Interest Group on addressing the climate crisis (2024-25)