

Committee: Education, Energy, and the Environment
Testimony: Certificate of Public Convenience and Necessity and Related Approvals – Definition of Generating Station (“Critical Infrastructure Streamlining Act of 2024”)
Position: Informational Testimony
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Informational Testimony

Chesapeake Climate Action Network Action Fund

Data centers are a burgeoning industry with significant benefits in today's modern world and significant drawbacks. Thanks in part to tax incentives passed by Maryland legislators in 2020, data center operators are eyeing potential sites in Frederick and Montgomery counties.¹ Maryland is considering how to welcome this industry to our state. We offer the following informational testimony to provide context for this decision.

Our neighbors in Virginia are grappling with the impact of data centers right now. Data center alley—spanning roughly 600 acres in northern Virginia—is home to more than 20% of all known hyperscale data centers, according to the [Virginia Economic Development Partnership](#). Such a high concentration of data centers requires massive amounts of energy. As of late 2022, data centers accounted for [more than 20% of Dominion Energy’s electricity sales](#) [p.26]. The load on the grid from data centers in Dominion’s territory is expected to more than triple by 2030, rising from under 5 gigawatts (“GW”) in 2024 to 15 GW in 2030, and then soaring to 25 GW in 2040, [according to recent projections from PJM](#) [p.23].

To meet this demand, Dominion’s 2023 [Integrated Resource Plan](#) wants to leave in place existing fossil-fuel generation and pursue an all-of-the-above energy strategy. Dominion has [already proposed](#) building a new gas-fired “peaker plant” in Chesterfield County to accommodate the expected load growth primarily from data centers. This new gas plant is one of [seven new plants](#) the company is proposing to construct in the coming years.

The sheer number and scale of Virginia data center proposals and the accumulation of so many data centers in such a relatively small area has led to a severely constrained electric grid and increased reliance on polluting backup diesel generators. Though they don’t run continuously,

¹ In an initial foray into Maryland, data center developers have identified approximately 9,400 acres of agriculturally zoned land in southern [Frederick County](#) and possibly more than 740 acres in [Montgomery County](#) for data centers.

the generators require frequent testing. When all the generators run at once—for example, during a power outage—they can generate as much electricity as a power plant.²

Historically, power outages in Maryland are uncommon. In its request for a rehearing before the Maryland Public Service Commission, the data center company Aligned wrote that the site of its proposed data center in Frederick County had experienced an average of two outages a year.³ All told, Aligned estimated that running its backup generators for maintenance and readiness testing combined with power outages would result in potential emissions of 3,738 metric tons of carbon dioxide equivalent (“CO₂e”) per year.

The historical record, however, does not take into account the additional strain on the grid from these data centers. Data centers concentrated in Loudoun County caused so much strain on the grid that regulators [proposed a variance](#) to allow them to switch to generator power during emergencies, freeing up more electricity for residential customers. Essentially, the proposal from the state’s Department of Environmental Quality was to use the data centers’ diesel generators as a peaker plant during times of highest demand. Ultimately, the variance was withdrawn but the fact remains that regulators in Virginia were tempted to rely on backup diesel generators to free up more power for residential customers.

In addition to the climate concerns, these data centers require significant amounts of water and land and are extremely noisy neighbors. According to a [Virginia Tech study](#), data centers rank among the top 10 water-consuming commercial industries in the United States, using approximately 513 million cubic meters of water in 2018. Much of that water use comes from electricity use—coal, nuclear and gas plants take water to operate, and hydropower also consumes water—but about a quarter is due to using water for direct cooling.

Large industrial installations such as data centers also require expanses of impermeable paved surfaces that worsen stormwater flooding, disturb watersheds, prevent natural groundwater recharge, and affect local aquifers and drinking water. Storage of diesel fuel for data centers’ backup generators increases risk of release to the region’s watersheds.

The impact these data centers will have on our state is yet to be determined. Virginia, where the industry faced scant initial regulation, is now trying to catch up with the impacts. This General Assembly session, Virginia lawmakers introduced more than 15 bills focused on data centers.

² Aligned Data Centers (MD) Propco, LLC (“Aligned”) requested an exemption from the PSC’s Certificate of Public Convenience and Necessity (CPCN) process for up to 168 three-megawatt diesel backup generators. Combined, these diesel generators would have more capacity than the now-closed C.P. Crane coal plant.

³ Md. Public Service Commission, Aligned Rehearing Request (Maillog No. 302893).



Maryland has an opportunity to learn from Virginia's experience and get ahead of this industry, with all of its pluses and minuses. Now—before the industry is established—is the time to fully review industry practices and proposals to balance the benefits of the industry with our state's climate and conservation commitments.

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