



April 3, 2026

To: Fauquier County Planning Commissioners, Board of Supervisors, and Staff

Re: Remington Technology Park Amendment: [REZN-25-025515](#)

Dear Honorable Commissioners, Supervisors, and Staff:

On behalf of Citizens for Fauquier County,¹ I am writing to express our support for the Planning Commission's recommendation regarding the proposed amendment to the Remington Technology Park (RTP) development. CFFC's prior comments dated February 12, 2026, also continue to be applicable to this development.

At the outset, we note a fundamental concern raised by Commissioner Herbert: Fauquier County currently lacks a clearly defined ordinance framework governing private, utility-scale power generation associated with data center development. The absence of such guidance creates a policy vacuum at precisely the moment when proposals of an unprecedented scale are being introduced. It is therefore deeply concerning that the County is being asked to consider approving what is, in effect, a large industrial power generation facility without the benefit of a clear regulatory framework to address its impacts. Purporting to approve this industrial use as an accessory use or rezoning without any ordinance framework would set a very deleterious precedent.

The Planning Commission appropriately recognized that the current proposal represents a substantial departure from the 2018-approved project. What was originally envisioned as a Business Park has now evolved into a proposal that includes large-scale, continuous on-site power generation. The introduction of approximately 200 MW of combustion turbines fundamentally changes the nature of the project. It introduces industrial-scale impacts—air emissions, noise, and mechanical infrastructure within a half mile of established communities that were not contemplated under the original zoning approval.

¹ Founded in 1968, Citizens for Fauquier County is a non-partisan, non-profit, volunteer driven organization representing thousands of residents active in local conservation efforts. It is CFFC's mission to preserve the natural, historic and agricultural resources of Fauquier County, and to protect the county's uniquely rural quality of life through education and leadership.

Beyond land use, this proposal raises broader air shed and public-health considerations. The emissions from the Vantage VA2 Data Center (a smaller, but similarly equipped data center facility in Sterling, Virginia) provide alarming estimates of the health and economic consequences. The noted study, similar to others conducted in South Carolina and West Virginia, shows that even small increases in fine particulate matter - known as PM 2.5 - from gas turbines are linked to higher risks of heart attack, pneumonia, cardiovascular disease, stroke, cancer, and premature death.^{2 3}

The Vantage facility in Sterling, permitted by DEQ in 2023 (see images of that facility in Appendix A), is important to Fauquier County's deliberations on RTP's proposal, as it proposes the same Solar Turbines used in Sterling. Because RTP proposes using 13 of these turbines, rather than the eight in use at Vantage, it is reasonable to assume PM 2.5 levels and noise will be higher. To our knowledge, the Vantage facility is the only on-site, natural gas turbine operating at a data center in Virginia, so it provides a good comparator.

Based on DEQ-reported emissions, the two existing nearby peaker plants (Remington and Marsh Run) Dominion emitted approximately 18.9 tons of PM_{2.5} in 2024. A turbine-based data center operating continuously at the scale proposed for RTP could emit on the order of 90 tons per year—nearly five times higher than current “background” levels. This comparison reflects a fundamental difference in operating profile: intermittent peaking generation versus continuous industrial operation.

By way of scale, publicly available estimates indicate that a turbine-based data center of the size proposed by RTP in Remington, plus existing emissions from the peakers in Remington, could emit on the order of 100 tons per year of PM_{2.5}. This may seem modest, but it is comparable in magnitude to the total emissions reported for major regional sources, including Washington Dulles International Airport.⁴

² Air Quality, Health, and Economic Impacts of the Vantage Data Center Facility. 2026. EmPower Analytics Group LLC. Sponsored by Piedmont Environmental Council. <https://www.pecva.org/wp-content/uploads/Health-Impacts-Vantage-Data-Center-Report-2.pdf>

³ The Unpaid Toll: Quantifying the Public Health Impact of AI. In Review. UC Riverside <https://arxiv.org/pdf/2412.06288>

⁴**Sources:** The LTO count comes from FAA OPSNET 2022 (~296,000 annual operations = 148,000 LTOs). The emission factors come directly from EPA's 2022 Aviation NEI documentation prepared by Eastern Research Group — these are AEDT-modeled values reported in Table 4-1 of that report,



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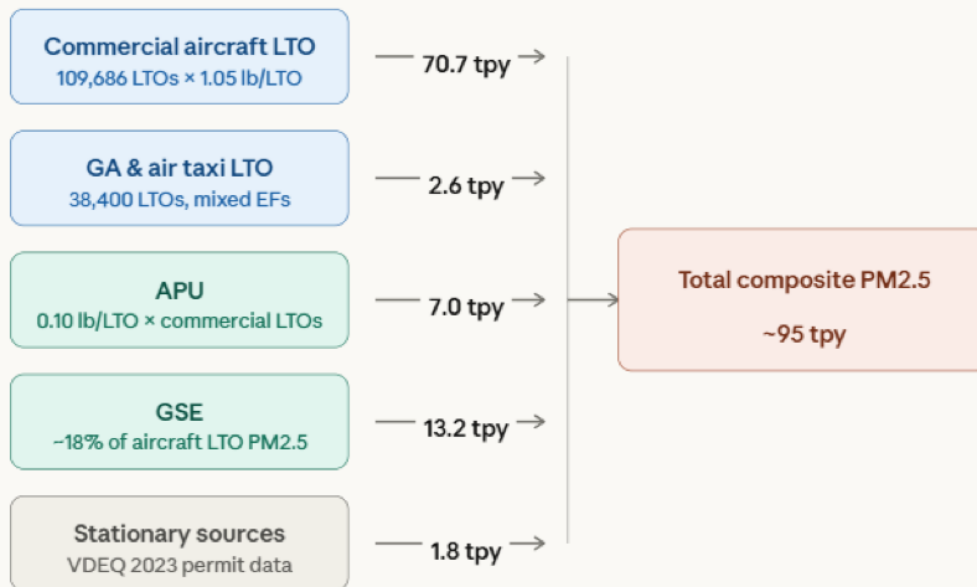
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which is the same methodology EPA uses for the National Emissions Inventory. The APU factor is the AEDT mid-range default (0.10 lbs/LTO). The GSE estimate at 18% of aircraft PM2.5 is a typical ratio for large commercial hubs per FAA guidance. The stationary 1.79 tpy comes from the VDEQ 2023 Annual Point Source file, which we downloaded and searched directly.

<https://gaftp.epa.gov/Air/emismod/2022/v1/reports/mobile/airports/Aviation2022%20Documentation%20v4.pdf>

IAD PM2.5 composite estimate: ~95 tons/year (2022 basis)

The estimate is built from the bottom up using EPA's own aviation emission factors applied to IAD's actual 2022 flight activity. Here's what went into it:



LTO activity: FAA OPSNET 2022 (~296,000 total ops)
Emission factors: EPA/ERG 2022 Aviation NEI (AEDT-derived, Table 4-1)
APU factor: AEDT mid-range default
GSE: Estimated at 18% of aircraft LTO (typical large hub)
Stationary: VDEQ 2023 Annual Point Source Area Pollutant Emissions (Reg No. 70003)



While these estimates are derived from different inventories and are not directly comparable, they illustrate the industrial scale of the proposed facility.

Notwithstanding the threshold question regarding whether or not there is even authority under Fauquier’s ordinances to approve a private power plant, there is the question of the type of power used to power the facility. The technology proposed for RTP—simple-cycle gas turbines—is widely used because it is fast to deploy and relatively inexpensive. However, it is also the least efficient option when operated continuously, resulting in higher emissions per unit of electricity than other available technologies.

More efficient and lower-impact alternatives are readily available today. Combined-cycle natural gas plants can reduce carbon emissions by roughly one-third. Dry or hybrid cooling can significantly reduce emissions and water consumption. Fuel-cell systems produce very low local emissions, minimal noise, and require no cooling water. Appendix B provides a detailed comparison of alternative power generation technologies.

Regarding the noise impacts, Fauquier’s Data Center Policy recommending continuous noise monitoring devices with a real time public website for testing results should be implemented at RTP’s expense. Fauquier Data Center Policy at III.F. 5. and G. 7. A final deadline for demonstrating noise compliance prior to issuance of an Occupancy Permit, with a serious penalty such as non-issuance or revocation of any Occupancy Permit, should be required. Periodic noise testing, even with efforts to buffer the noise, without any deadline for compliance is simply not acceptable for a project of this magnitude.

In our view, the key issue before the county is whether or not a private power plant is permitted under the current ordinance framework. The answer is “no” for good reason; the health and safety of the public must be protected. The configuration now under consideration relies on the lowest-cost and highest-impact form of gas-fired generation, despite the availability of alternatives. The impacts on public health from air emissions and noise are quite different from what DEQ is likely to consider.

For these reasons, we respectfully encourage the county (Planning Commissioners, Board Supervisors and staff) to consider whether additional evaluation of alternative technologies is warranted before approving this amendment.

Respectfully submitted,

Mary Page Schmidt

President

Citizens for Fauquier County

Appendix A — Photographs from the Vantage VA2 Data Center located in Sterling, Virginia. DEQ provided the permits in 2023, Loudoun County approved the site plan in 2024, and the plant was commissioned in late 2025.



<https://www.power-eng.com/gas/rapid-deployment-of-solar-turbine-smt130-catalytic-systems-bradens-drive-technology-in-action/>

Figure 1. Construction site for Vantage installing eight Solar SMT-130 turbines



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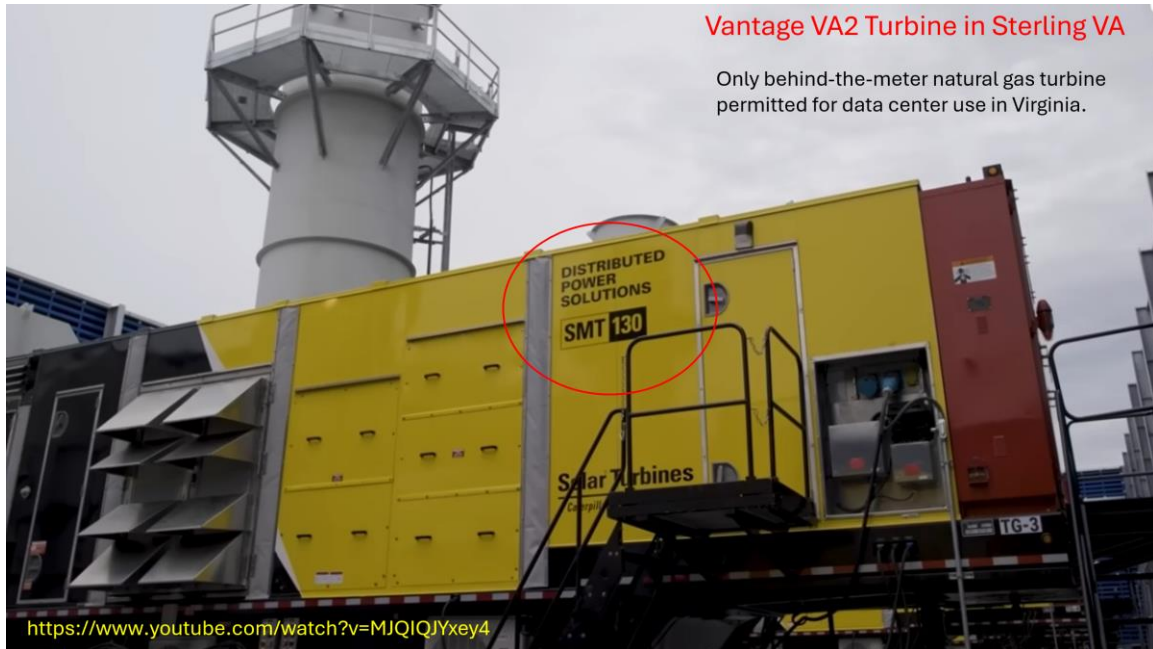


Figure 2. Solar SMT-130 natural gas turbines installed at Vantage Data Center in Sterling, VA. The shown unit is just the combustor and 50' stacks.



Figure 3. 50' Louvered surrounds are used to reduce visual impact with little impact on



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sound emissions. They are roofless



Figure 4. The Vantage roofless turbine building covers 1.5 acres and is about 50 feet tall. The noise emissions have been described by local residents as a continuous whine, with decibel readings exceeding Loudoun County's thresholds.

Noise and Air Quality Complaints at Vantage VA2

"The noise is so bad that one of our neighbors had to put mattresses up against his bedroom window so he could sleep at night. Other neighbors complain that the noise gives them headaches. The Vantage data center construction and incessant noise have driven birds out of the trees on our properties. Other wildlife is negatively affected by not only the noise, but also the unnatural vibration it causes. I have measured the decibel levels of the noise near the power plant, and it is always in excess of the county regulations."

<https://www.loudounnow.com/opinion/letter-gregory-pirio-sterling/article-beac1c63-231d-49bb-bb91-3a7473ef5d07.html#:~:text=Sadly%2C%20there%20are%20many%20other,and%20Virginians%20across%20the%20state.>

Appendix B — Comparison of On-Site Power Generation Options (200 MW Continuous) for Purposes of RTP.

All options below can deliver approximately the same continuous power (~200 MW). The key differences are in cost, timing, emissions, noise, water use, and overall community impact.

1. Technology Overview

Metric	Simple-Cycle Turbines (Solar SMT)	Combined Cycle (Wet Cooling)	Combined Cycle (Dry / Hybrid Cooling)	Fuel Cells (SOFC)
Typical configuration	~13 gas turbines (~15–25 MW each)	Gas turbine + steam turbine + cooling tower	Gas turbine + steam turbine + air-cooled condenser (or hybrid)	Modular fuel-cell stacks (~5–10 MW each)



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Metric	Simple-Cycle Turbines (Solar SMT)	Combined Cycle (Wet Cooling)	Combined Cycle (Dry / Hybrid Cooling)	Fuel Cells (SOFC)
Typical use	Peaking / backup (not designed for continuous duty)	Utility baseload generation	Baseload in water- constrained regions	Data centers / microgrids
Capital cost (\$/kW)	\$1,600–1,700	\$1,800–2,000	\$1,900–2,200	\$2,600+
Total cost (~200 MW)	~\$335M	~\$360–400M	~\$380–450M	~\$500–550M
Delivery time	12–24 months	30–42 months	36–48 months	6–18 months (modular)
Electrical efficiency	~35–40%	~55–60%	~52–58%	~55–60%

2. Air Emissions (per unit of electricity generated)

Metric	Simple Cycle	Combined Cycle	Dry / Hybrid CCGT	Fuel Cells (SOFC)
CO ₂ (lb/MWh)	~1,100 (highest)	~730	~750–780	~680–830
NO _x	Moderate	Lower	Lower	Near-zero
SO _x	Very low on pipeline gas	Very low	Very low	Near-zero
PM _{2.5}	Estimated at 91 TPY based on DEQ permit for Vantage VA2	Lower per MWh than simple cycle	Similar to wet CCGT (cooling choice does not materially change PM _{2.5} rate)	Near-zero (no combustion)

Note: PM_{2.5} emissions for natural gas turbines are typically not reported as a standard concentration by manufacturers and are instead estimated in permits using EPA AP-42 factors or site-specific testing. This is a real problem for State Regulators like VA DEQ who can only measure actual emissions after commissioning.

3. Community Impacts



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Metric	Simple Cycle	Combined Cycle (Wet)	Dry / Hybrid CCGT	Fuel Cells (SOFC)
Noise	75–85 dBA (highest)	~75–80 dBA	~75–80 dBA	<65 dBA (lowest)
Water use	Minimal	~0.8–1.0 million gallons/day	~0.05–0.4 million gallons/day	None
Physical footprint	Large turbine field (multiple stacks)	Large industrial plant + cooling towers	Large plant + air-cooled condensers	Compact modular footprint
Visual impact	2.5 ac footprint with 78'-85' enclosures	Large plant structures	Large structures + condenser arrays	Low-profile equipment blocks

4. Key Trade-Offs

- Simple-cycle turbines → Lowest cost and fastest deployment → Highest emissions per MWh and highest noise
- Combined-cycle (wet cooling) → ~35% lower CO₂ emissions and higher efficiency → Requires significant water use
- Combined-cycle (dry/hybrid) → Similar emissions benefits to combined cycle → Substantially reduced water use, modest cost and efficiency trade-offs
- Fuel cells (SOFC) → Lowest local air pollution, lowest noise, no water use → Higher upfront cost, modular deployment

Bottom Line

All options deliver the same power.

- Lower cost and faster deployment → higher emissions and greater community impact
- Higher-performance technologies → lower emissions, lower noise, and reduced resource use