cleanwisconsin

April 14, 2026
Secretary Dr. Karen Hyun
Wisconsin Department of Natural Resources
101 S. Webster St.
Madison, WI 53703

Re: Clean Wisconsin's comments on the Draft Air Pollution Operation Permit No. 24618528A-F01 and Construction Permit No. 25-MIN-094 for the Vantage data center in Port Washington, Ozaukee County, Wisconsin

Dear Secretary Hyun,

Clean Wisconsin submits these comments on the Draft Air Pollution Operation Permit No. 24618528A-F01 and Construction Permit No. 25-MIN-094 for the Vantage data center in Port Washington. Clean Wisconsin is a statewide environmental nonprofit organization that works to ensure a healthy future for every Wisconsin community by combatting climate change and pollution. These comments demonstrate how air pollution from the emergency generators at the Vantage data center will harm air quality and public health in Wisconsin. Clean Wisconsin is concerned the draft operation permit does not do enough to measure or mitigate that harm. To address these concerns, we recommend conditions to the permit that: 1) require the use of generators compliant with U.S. EPA's Tier 4 emissions standards; 2) limit the emergency generators to only run during emergencies and for required testing; and 3) install continuous fenceline monitoring systems whose data is made publicly available.

Ozone pollution in eastern Wisconsin and its public health impact

Ozone is a National Ambient Air Quality Standards (NAAQS) regulated criteria air pollutant for one reason only: it is harmful to human health, by damaging the respiratory system. Specifically, ozone is associated with respiratory and cardiovascular diseases, like asthma and COPD.[1] Ozone exposure is also associated with premature death.[2] In Wisconsin, ozone is estimated to cause 100-400 premature deaths per year.[3] Human-related emissions of ozone precursors (nitrogen oxides, NOx, and volatile organic compounds, VOCs) create a public health

[1] *See* Lippman 1989. Health Effects of Ozone: A Critical Review. https://www.tandfonline.com/doi/abs/10.1080/08940630.1989.10466554; Kim et al. 2020. Health Effects of Ozone on Respiratory Diseases. https://pmc.ncbi.nlm.nih.gov/articles/PMC7837374/; Zhang et al. 2019. Ozone Pollution: A Major Health Hazard Worldwide. https://www.frontiersin.org/journals/immunology/articles/10.3389/fimmu.2019.02518/full

[2] United States Environmental Protection Agency. 2025. Health effects of ozone in the general population. https://www.epa.gov/ozone-pollution-and-your-patients-health/health-effects-ozone-general-population

[3] Zhang et al. 2018. Long-term trends in the ambient PM2.5- and O3-related mortality burdens in the United States under emission reductions from 1990 to 2010. Atmospheric Chemistry and Physics 18: 15003–15016; Malashock et al. 2022. Estimates of ozone concentrations and attributable mortality in urban, peri-urban and rural areas worldwide in 2019. Environmental Research Letters 17: 054023; United States Environmental Protection Agency. 2025. Co-Benefits Risk Assessment Health Impacts Screening and Mapping Tool (COBRA). https://www.epa.gov/cobra.

burden in Wisconsin valued at $6 billion per year, including premature death, hospital and ER visits for respiratory conditions, asthma symptoms, and missed school and work days.[4]

Port Washington is located in Ozaukee County, a county that is in nonattainment of the ozone 2015 NAAQS. Nearby counties, including portions of Sheboygan, Washington, Waukesha, Racine, and Kenosha Counties, and the entirety of Milwaukee County are also in nonattainment for ozone. Nonattainment counties have more stringent emissions regulations and permitting requirements, since local sources of ozone precursors (NOx and VOCs) affect local air quality. These nonattainment areas were reclassified from Moderate to Serious in 2024, however, that reclassification is currently under litigation. What is undisputed is that there is consistent, persistent ozone pollution issue along Wisconsin's eastern lakeshore, an area with a large and diverse population.

Approximately one-third of Wisconsin residents live in areas not meeting the 2015 NAAQS and experience unhealthy levels of ozone, including residents of Ozaukee County.[5] There are no regulatory ozone monitors in Port Washington, but there are two monitors within 10 miles of the project: Harrington Beach to the north and Grafton to the south. Between 2020 and 2024, these monitors recorded an average of six days (Harrington Beach) and seven days (Grafton) per year when ozone levels exceeded the NAAQS.[6] Furthermore, there is an average of 24 day (Harrington Beach) and 22 days (Grafton) per year where ozone exceeds the 60 ppb limit suggested by the American Lung Association as a more appropriate and protective level.[7] While we recognize that this is not a regulatory standard, ozone pollution is demonstrably currently having a public health impact in this area, and additional substantial emissions of ozone precursors will make it that much more difficult to attain healthy air quality.

Due to the lack of regulatory air monitors in the project area, we estimated ozone levels using results from the USEPA's Downscaler Model.[8] The most recent three years of data available from this model include years 2020-2022. Census tract 6302.01, where the project is located, and surrounding census tracts, including the city of Port Washington already experience nearly five days a year on average where ozone exceeds the ozone NAAQS. These tracts also see 18-20 days per year when ozone exceeds 60 ppb.

Climate change is poised to worsen the ozone pollution of eastern Wisconsin. Hot, sunny conditions are essential for ozone formation. With climate change, Wisconsin is expected to, and

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[4] United States Environmental Protection Agency. 2025. Co-Benefits Risk Assessment Health Impacts Screening and Mapping Tool (COBRA). https://www.epa.gov/cobra.

[5] Wisconsin Department of Natural Resources. 2022. DNR Releases 2022 Air Quality Trends Report. October 11, 2024. https://content.govdelivery.com/accounts/WIDNR/bulletins/3319c1d

[6] Excluding 2023, which was a particularly high ozone year due in part to the wildfire smoke in May and June, both monitors averaged 5 days a year where ozone exceeded the NAAQS in 2020, 2021, 2022, and 2024; Source for the monitor data: US EPA. 2025. Air Data-Multiyear Tile Plot. https://www.epa.gov/outdoor-air-quality-data/air-data-multiyear-tile-plot

[7] Excluding 2023, the monitors recorded an average of 20 (Harrington Beach) and 18 (Grafton) days per year where ozone exceeded 60 ppb; Cromar et al. 2022. Excess morbidity and mortality associated with air pollution above American Thoracic Society Recommended Standards, 2017–2019. Annals of the American Thoracic Society 19: 603–613

[8] To fill in gaps between monitors, air quality models combine monitor data and meteorological information with emissions, air chemistry, and transport models to predict the movement of air pollutants and provide continuous air quality estimates; Source for the Downscaler Model data: United States Environmental Protection Agency. 2025. RSIG-Related Downloadable Data Files. https://www.epa.gov/hesc/rsig-related-downloadable-data-files.

has already experienced, longer summers and thus longer ozone seasons.[9] Wildfire frequency and severity are also fueled by climate change. In recent years, western U.S. and Canadian wildfire smoke plumes have affected air quality in the Upper Midwest, resulting in increased days of unhealthy and very unhealthy air quality for the general public, based on the Air Quality Index. Wildfire smoke plumes can also transport ozone precursors and in 2023 led to some of the highest ozone levels in the past 15 years.[10]

Vantage data center backup generators health impact estimates

To better understand the impacts of Vantage's proposed air emissions, we estimated the health effects of the project's emergency generators using the U.S. EPA's Co-Benefits Risk Assessment Health Impacts Screening and Mapping Tool (COBRA), adjusting for the diesel fuel limit in the draft permit. The fuel usage limit is assumed to be applied proportionally across all generator types, and an adjustment factor of 0.939 (reflecting the ratio of the draft permit diesel limit to the proposed fuel limits in the application) was applied to annual emissions reported in Table 1 of the Permit Application.

The increases in fine particulate matter and ozone due to emissions from the emergency generators at the proposed data center are estimated to impose public health burden valued at $88,000-$108,000 each year in Ozaukee county, and $867,000-$1.3 million statewide (Table 1). The majority of the health effects estimated are due to increases in ozone formation. The host county, Ozaukee is estimated to bear about 10% of the total health costs, despite making up less than 2% of the total state population, illustrating the localized impacts.

Table 1. Health effects from Vantage Data Center emergency diesel generator emissions in Ozaukee County and Wisconsin statewide estimated by the U.S. Environmental Protection Agency's Co-Benefits Risk Assessment Health Impacts Screening and Mapping Tool (COBRA), web edition. This table shows the total health impact as well as the individual impacts contributing most to the overall total.

	Ozaukee County		**Wisconsin**	
	Additional Incidences Per Year	Monetary Value ($)	Additional Incidences Per Year	Monetary Value ($)
Mortality	0.006-0.007	$81,604-$101,624	0.06-0.08	$866,723-$1,197,526
Asthma Onset	0.02	$1,524	0.315	$24,017
Asthma Symptoms	3.316	$1,128	49.743	$15,771
School Loss Days	1.854	$3,149	13.996	$1,760
Total Health Effects from $PM_{2.5}$ and O_3 (amount attributable to O_3 in parentheses)		$87,849-$107,869 ($68,288)		$957,730-$1,288,534 ($650,752)

[9] Wisconsin Initiative on Climate Change Impacts. 2026. Wisconsin's Changing Climate: Envisioning a climate-resilient future. https://wicci.wisc.edu/2026-assessment-report/

[10] Cooper et al. 2024. Early season 2023 wildfires generated record-breaking surface ozone anomalies across the US upper Midwest. Geophysical Research Letters 51: e2024GL111481.

Permit Conditions

Because the generators are to be permitted as a synthetic minor source for ozone, DNR must ensure that the forty-five diesel-fired generators' actual emissions never exceed the major source threshold. Additionally, these restrictions must be practically and federally enforceable limitations, meaning that DNR, U.S. EPA, and private citizens are able to enforce the permit limitations as a practical matter.[11] Clean Wisconsin notes that the permit does contain a restriction on the amount of fuel the permittee may combust in the operation of all generators combined in any consecutive 12-month period, which theoretically should keep the NOx emissions from this source below the major source threshold whether the area is classified as Moderate or Serious nonattainment.

Clean Wisconsin supports the fuel limit of 324,000 gallons per year that DNR included in Vantage's draft permit. This fuel limit ensures that even if Vantage only runs their most polluting generators (Caterpillar 3516E), their overall emissions will remain under 50 tons per year. Clean Wisconsin, however, recommends several additional permit conditions to further protect air quality and public health. DNR should: 1) require the use of generators compliant with U.S. EPA's Tier 4 emissions standards; 2) limit the emergency generators to only run during emergencies and for the required testing; and 3) install continuous fenceline monitoring systems and make this monitoring and other data publicly available.

It is our understanding that all three diesel emergency generator models chosen by the Applicant meet U.S. EPA's Tier 2 emissions standards. Vantage should instead be required to use generators that are compliant with U.S. EPA's Tier 4 emission standards. Tier 4 compliant generators have lower NOx and PM emissions, often achieved through the use of advanced exhaust controls. Given the persistent ozone pollution of eastern Wisconsin and the region's emergence as a hotspot for data center development, requiring Tier 4 generators is an appropriate permit condition. DNR should require Tier 4 compliant generators and maintain the fuel limit imposed in the draft permit.

In addition to the 324,000 gallons per year fuel limit, Vantage's emergency generators should be limited to operating only for emergencies and required testing. Specifically, the Applicant should be disallowed from using these emergency generators for 1) demand response and 2) short-term grid disturbances even if they meet conditions as currently noted in paragraph (f)(3)(i) of the draft permit.

The air pollution and public health risks outweigh the advantages of Vantage's diesel generators participating in any demand response or peak shaving programs. Peak demand, the hours when MISO's electricity grid is the most strained and merits the use of demand response resources, often coincide with the hottest days of the summer. These hot and usually sunny days are optimal for ozone formation. Due to the geographic location of these generators in Wisconsin's nonattainment area and the high emissions rates of diesel generators, especially compared to other electricity generating resources, Vantage's emergency generators should not be allowed to participate in any demand response programs.

We recognize that the U.S. EPA has shared guidance that stationary engines can participate in demand response programs while still complying with 40 CFR part 60 subpart

[11] *See* EPA Office of the Inspector General, EPA Should Conduct More Oversight of Synthetic-Minor-Source Permitting to Assure Permits Adhere to EPA Guidance, Report No. 21-P-0175, Jul. 8, 2021.

IIII,[12] which states "the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response." This guidance, contrary to previous regulatory interpretation, does not mandate demand response participation nor preclude states from imposing permit conditions that disallow non-emergency operation. While the Clean Air Act uses yearly emissions thresholds to reduce precursor and criteria air pollutants, it is worth evaluating the likely timing of demand response or peak shaving participation in DNR's consideration of this permit condition.

Vantage's diesel generators should also be disallowed from being used to power their data center during minor and momentary grid disturbances. These disturbances on the power grid, from voltage and over-frequency incidences, are not true emergencies that merits the use of polluting diesel generators for hours. Major loads from data centers going offline in response to these grid fluctuations can worsen grid conditions and lead to cascading power outages. Data centers should instead be required to use power controls to ride-through voltage and over-frequency disturbances, a standard applied to wind and solar inverter-based generation.

Finally, we request that Vantage be required to install continuous fenceline monitoring systems, and that all data, including emissions, runtime, and reason for generator use, be made publicly available. Vantage requested approval for an alternative to the requirement of NR 428.07, which requires the installation of monitoring systems. The draft permit approves this alternative by including the suggested alternatives as permit requirements instead of the monitoring systems required under NR 428.08. Diverging from the state NOx emissions monitoring requirement is not appropriate, given the total combined size (87 MW) of the backup generators, the lack of regulatory monitors in the project area, the persistent ozone pollution issue in eastern Wisconsin, and the nearby population centers. Lack of transparency regarding data centers should not extend to the federal and state regulated criteria air pollutants emitted from their backup generators.

Conclusion

Precursor emissions from the emergency generators at the Vantage data center will exacerbate ozone pollution in Ozaukee County, a county in nonattainment of the 2015 ozone NAAQS and part of the eastern Wisconsin that experiences persistent ozone pollution. This ozone pollution is harming public health in the most populous and diverse areas of the state. Clean Wisconsin estimates that generators at the proposed data center will impose an additional public health burden valued at $88,000-$108,000 each year in Ozaukee County, and $867,000-$1.3 million statewide.

While the draft operation permit imposes a 12-month consecutive fuel limit that Clean Wisconsin supports, it does not do enough to measure or mitigate the harm from air pollution. We ask that DNR adopt the recommendations herein to better protect air quality and public health.

[12] U.S. EPA. 2025. Fact sheet and Frequently Asked Questions: Use of backup generators to maintain the reliability of the electric grid. https://www.epa.gov/system/files/documents/2025-05/rice-memo-on-duke-energy-regulatory-interpretation-04_17_25.pdf