

I am submitting this comment regarding the potential impacts of thermal emissions from Project Jupiter and the apparent absence of a comprehensive evaluation of those impacts in the permit record.

Project Jupiter is proposed as an approximately 2,460-megawatt fuel-cell-based generating facility operating continuously in conjunction with a large data center campus. While the permit application contains analyses of conventional air pollutants and regulatory air quality impacts, it is not apparent that the record includes a dedicated assessment of the physical effects of the project's **unprecedented thermal emissions**.

Based on publicly available project information, the facility could continuously reject well over one gigawatt of waste heat. Although large power plants routinely reject substantial quantities of heat, Project Jupiter appears likely to represent **one of the largest continuous anthropogenic heat sources ever proposed in New Mexico**. The scale of the thermal release is sufficiently unusual that it **should not be assumed that impacts can be inferred from experience** with smaller industrial facilities.

Of particular concern is the project's location relative to federal airway V16. FAA aeronautical charts depict Victor Airway V16 crossing directly over or immediately adjacent to the proposed facility site. The published Minimum Enroute Altitude (MEA) for this segment is 6,600 feet MSL. Nearby terrain and airport elevations are approximately 4,100 feet MSL, indicating that aircraft utilizing V16 may routinely operate only about 2,500 feet above ground level in the vicinity of the project.

The permit record does not appear to contain an analysis demonstrating that the project's thermal plume will remain below navigable airspace or evaluating **whether the plume could generate thermal gradients, convective updrafts, localized turbulence, or other atmospheric effects that may be relevant to aircraft** operating on V16. I recognize that the New Mexico Environment Department does not regulate airspace or aviation safety. However, the absence of such analysis raises a legitimate question regarding **whether all reasonably foreseeable consequences of the project's thermal emissions have been adequately characterized** and whether consultation with the Federal Aviation Administration has occurred.

This issue is particularly important because Project Jupiter is not a conventional stand-alone power plant. The project combines utility-scale electrical generation with a large data-center complex and associated cooling infrastructure. Consequently, the site may produce **multiple interacting thermal sources**, including:

- Higher-temperature exhaust plumes associated with power generation;
- Large-area, lower-temperature heat rejection associated with data-center cooling systems;
- Continuous 24-hour operation throughout the year; and
- Distributed thermal emissions across a substantial facility footprint.

The interaction of these thermal sources may differ significantly from the plume behavior associated with traditional industrial facilities. Lower-temperature cooling-system discharges may interact with hotter exhaust plumes in ways that affect plume rise, plume persistence, atmospheric mixing, turbulence generation, and vertical transport. **The permit record does not appear to evaluate these combined effects.**

Accordingly, I request that NMED require the applicant to clarify whether:

1. A dedicated thermal plume analysis has been conducted;
2. The applicant has evaluated maximum plume height, plume persistence, vertical velocities, and atmospheric effects under representative meteorological conditions;
3. The applicant has assessed potential interactions between power-generation thermal emissions and data-center cooling emissions;
4. The applicant has consulted with the FAA or any aviation authority regarding the location of this facility beneath or immediately adjacent to Victor Airway V16; and
5. Any aviation-related review, modeling, or correspondence exists and can be included in the administrative record.

I am not asserting that Project Jupiter will create a hazard to aircraft operations. Rather, I am concerned that the **record currently does not demonstrate that such impacts have been evaluated.** Given the unprecedented scale of the proposed facility and its apparent location directly beneath a federal airway where aircraft may routinely operate only a few thousand feet above the site, **a quantitative assessment of thermal plume behavior appears warranted before permit approval.**

Thank you for your consideration of these comments.