

Dr. Antonio Lara

I am a citizen that is very concerned about our quality of life, should Project Jupiter's air quality permits be approved. I am a chemist with organic and environmental training and live 15 linear miles from Santa Teresa, New Mexico. My research involved soot abatement for brick manufacturing and uranium abatement to produce potable water from uranium contaminated sources.

The data provided in this application comes from a test unit that was rated at 65 megawatts and operating at 71 megawatts; in reality the chemical and physical characteristics of these fuel cells will be magnified to meet the 2,461 megawatts needed for the proposed project. To extrapolate findings from this data to Project Jupiter is statistically questionable.

At larger scales, this project may perform much differently, ESPECIALLY because of the myriad of chemicals involved in this process. For example, temperature will effect many aspects of the project. Temperature impacts the productivity of each chemical differently. For this particular case, NO_x is a product of nitrogen and oxygen from the air reacting to produce NO_x. This process is very temperature dependent.

For example, methane is 32 times more reactive/ toxic than carbon dioxide. Problems will arise if methane were to leak during transportation or through on-site processes. There will be leaks. As another related example, N₂O is 273 times more reactive/toxic than carbon dioxide. These are temperature dependent toxicities; this is why these related species should be considered independently.

Stacking Bloom energy server units will lead to completely different NO_x concentrations due to increases in temperature such as with a stacked configuration. Therefore there is not a linear relationship with respect to the number of Bloom energy server units. A collection of units as proposed by Project Jupiter will definitely have a different temperature effect on the NO_x that is produced. There is a likelihood that this profile will be exponential and runs contrary to a one unit analysis.

The effect of temperature on NO_x reactivity is not linear; it is more "exponential-like". For example, NO and NO₂ have different chemistries so to combine their reactivity on a mass basis can be erroneous especially if the mass ratios are significantly different.

The baseline testing by Montrose and Blue Sky was on a new unit, in the real world everything deteriorates and the situation will worsen over time. These different scenarios cannot be extrapolated and compared to initial readings from a new unit. The duration of a new unit is ephemeral to units that run non-stop.

This project needs attention from many dimensions, including water, soil and other aspects of community impact. Air quality considerations are in front of you and I ask that this permit not be granted until the entirety of impacts are fully studied and fall within accepted protocols and measurements.