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Notice Of Intent

Person Filing

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OPF Matter No. AQB 26-570

Opposes the Permit

Sole Witness is Rocky Bacchus

Estimates Length of Testimony 30 minutes plus, if allowed 20 minutes to answer questions

CERTIFICATE OF SERVICE

I hereby certify that on the 24th day of September 2026, a copy of the foregoing was sent to the following parties or counsel of record via electronic mail:

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Expert Qualifications & Experience

A) Education/ Licensing

I attended UT Austin from 1974-1977, then started working in El Paso and transferred to the University of Texas at El Paso and graduated from there with a Bachelor of Business Administration Degree in Accounting in 1980.

A/C Contractor: Licensed A/C Contractor (New Mexico MM3 license #380198).

B) New Mexico Utility Rate Design Work

I became involved in Texas and New Mexico utility rate cases in 2011. I was a party in the Texas case opposing the EPE CCN for Montana units 3 & 4 in 2012-2014. I furnished written testimony, cross examined witnesses, and made oral arguments directly to the PUCT Commissioners in the hearing.

I testified as an expert witness in NMPRC Case No. 15-00127-UT, which was an El Paso Electric Company (EPE) general rate case, and as an expert witness in Case No. 20-00104-UT which was El Paso Electric Company' (EPE) last general rate case. Both of these were fully litigated cases.

I am continuing as an active participant in EPE's rate cases. In 2018 Las Cruces Mayor Miyagishima gave me the "Mayor's Distinguished Service Award" for helping the community save \$75 million in electric rates over a 10-year period.

I have been active in EPE's Integrated Resource Plan ("IRP") cases over the past 10 years.

From 2018 to 2025, I lobbied the NM Legislature for Community Solar and participated in the New Mexico Public Regulation Commission ("NMPRC") workshops to develop the rules for NM's Community Solar program.

From 2023 forward I have been a volunteer member of PNM's Pricing Advisory Committee "PRAC committee" working on pricing for their next rate case to presumably be filed in 2027.

C) Other Utility Work

Due to the efficiency advantages of the Aireze and later the Freus product lines, from 1978-2007 I worked with utilities to promote energy and peak savings primarily through rebate and rate design. The utilities included Nevada Power (now NV Energy), SMUD, PG&E, Redding Electric, APS, and SCE. Most of this work was in the form of working with field evaluations and program rate design. Of special note, I worked with the California Public Utility Commission ("CPUC"), served on their committees, led workshops, and commented on program plans. I was the top technical expert on HVAC maintenance performance impact. I also worked with the California Energy Commission ("CEC") to write performance standards and determine compliance credit for super-efficient water-cooled air conditioners.

D) Utility Consultant

I left A/C manufacturing to go into full-time utility consulting in 2007. I became a full-time consultant focused on the CPUC's big bold programs (\$1B+ per year program). For various clients, I attended workshops, read filings related to the CPUC service list for R.06-04-010, became a party, filed formal comments, and chaired the CPUC's Residential Long Range Planning Sub Committee for Standardization. I furnished written expert testimony and testified before the CPUC in hearings. As part of the CPUC's programs, the Western HVAC Performance Alliance ("WHPA") was formed to bring in industry partners to help address utility Heating, Ventilating, and Air Conditioning ("HVAC") issues. I was a Founding signatory of the WHPA in 2009, a member of the WHPA Charter Writing Committee, Chaired the WHPA Residential Quality Maintenance Committee, and served on the WHPA Steering Committee.

E) Air Conditioning Manufacturing

I was an owner and employed by the manufacturer of Aireze round evaporative coolers from 1976 – 2007 with various ownership and name changes. I was part of the executive team (VP Level and Board of Directors) for essentially the same air conditioning manufacturing company from 1976 to 2007. The company grew from five people manufacturing evaporative coolers to over 200 employees with manufacturing operations in the US and Juarez, Mexico, building water cooled refrigeration units. The company went public in a reverse merger onto the NASDAQ exchange in 1997, grew rapidly and later went back private. The company went through six ownership changes and went through multiple structural changes. These experiences gave me a wide variety of business cycle knowledge and experiences with multiple management styles and business environments.

During my 31 years with an A/C manufacturer, I worked in product development, engineering, and marketing. I was issued multiple patents, designed the Freus refrigerated air conditioner, and obtained Air Conditioning and Refrigeration Institute ("AHRI") performance certification for it. I started designing and installing solar systems (hydronic not photovoltaic) in 1979. Below are some highlights from 1976-2007.

Engineering work

During this career, I became a recognized air conditioning expert, serving in leadership roles for the American Society of Heating, Refrigeration and Air Conditioning Engineers ("ASHRAE"), leading research projects, and testifying before state bodies and Congress. My efforts covered multiple product lines including: "Freus" evaporative condensers, "AC2" evaporative Condensers, "EvapCon" evaporative air conditioners and heat pumps, "Aireze" direct evaporative coolers, "Supreme" rigid media "Celdek" evaporative coolers, and "E2PAK" commercial indirect evaporative cooling heat exchangers (used in the multi stage cooling units for Trane, McQuay, Carrier, and others). I was issued the following United States Patents in the Air Conditioning Field; 1) "Evaporative Cooler" #4,440,000 issued in 1984, 2) "Air Conditioner and Heat Dispenser" #4,738,305 issued in 1988, 3) "Heat Exchanger for Evaporative Cooling Refrigeration System" #5,832,739 issued in 1998, 4) "Heat Exchanger for Evaporative Cooling Refrigeration System" #5,992,171 issued in 1999, 5) "Heat Exchanger Apparatus and Method for Evaporative Cooling Refrigeration Unit" #7,263,852 issued in 2007.

I designed the Freus Water Cooled Air Conditioner, which achieved the highest certified efficiency level¹ of any residential air conditioner at the time. It surpassed all the competitors in the multibillion-dollar air

¹ Per AHRI Standard 210 which was the industry's certified standard and was subject to competitor challenges.

conditioning market. I led Freus' ETL safety certification, ARI performance certification, California CEC Title 24 recognition, and California CUWCC endorsement of a water savings level.

HVAC marketing work

I was Marketing manager for Freus A/C from 2000-2007, working with Freus' Distributors and Contractors. I designed pricing, signed up Distributors and Contractors, implemented CoOp marketing programs, worked home shows, led contractor training meetings, and other marketing duties. I grew pre-season orders from \$0 to over \$10M during this time.

HVAC Research Projects

These included A) New Mexico Energy Research and Development Institute contract for advanced evaporative cooling design efforts and B) Liquid desiccant air conditioning research project with Co-funding from the Gas Research Institute (GRI) of \$2,565,606. I was a Reviewer for the Army Corps of Engineers national guide specifications for evaporative cooling (CEGS- 15690). I also did advanced cooling tower and evaporative condenser projects for both Marley cooling towers and BAC cooling towers.

I was the California Public Utility Commissions lead technical expert in HVAC for their quality installation and maintenance incentive programs (Billion Dollar per year Program).

Industry Associations ASHRAE, NFPA, Founding director of the Evaporative Cooling Institute.

American Society of Heating Refrigeration and Air-Conditioning Engineers "ASHRAE" work

I was a member of committee on evaporative cooling (TC 5.7), 1986-2007. I was the Vice Chairman of the ASHRAE project to write a performance testing standard for direct evaporative coolers (SPC-133). I was Chairman of the subcommittee on evaporative cooling research. I was an ASHRAE sponsored lecturer for air conditioning seminars and/ or air conditioning contractor training in, Arizona, California, Louisiana, Maryland, New Mexico, Texas, Florida and Washington State.

F) Expert Witness for Congressional Investigation

Testified before the U.S. congressional committee investigating Free Trade led by Senator Pete Domenici as an expert witness relating to A/C Manufacturing in twin plants.

G) HVAC & Solar Contractor

To reduce travel requirements, in 2010 I started YellowBird Solar and Air Conditioning. This started as a geothermal HVAC business, and we installed the most residential geothermal HVAC system in New Mexico. We grew to include traditional HVAC services and solar services. We started in Southern New Mexico with just myself, my brother, and one employee. We grew it to \$12.5 in annual sales, with 75 team members, and 26 vehicles. I trained multiple team members and helped them get their contracting license and go on to form their own companies. At age 68, I retired and left the company at the end of 2023.

H) Cardinal Energy, Inc.

In 2026 I took the chief executive position with Cardinal Energy, Inc to pursue AI enabled energy opportunities.

Testimony Regarding Project Jupiter Air Quality Permit

Submitted by Rocky Bacchus 9/24/2026 575-652-0010

I. Executive Summary:

Yucca Growth Infrastructure, LLC - YGI Microgrid (hereafter “Project Jupiter” or “Jupiter”) filed April 27, 2026 for the air quality permit in question. During his 7/28/2026 presentation¹ to the Dona Ana County Commissioners Mahesh Thiagarajan, Executive Vice President of Oracle Cloud Infrastructure, confirmed that Oracle will only stay 17 of the 30-year IRB contract, and that Jupiter plans no solar power for the facility. In a later meeting Mahesh said Oracle has renewed all previous data centers and so they may renew Project Jupiter and stay the full 30 years in the IRB. The application lists multiple emissions including 10.144 million tons of CO₂ per year, which is **139%** of all existing NM electric utilities combined’ 7.275² million tons of CO₂ emissions per year.

In a standard air quality permit application, the issue would just be checking to make sure the applicant meets the standard state and federally allowed emissions levels and rules; however, this is not a standard situation because this facility is about three miles Northwest from, and 380 feet above Sunland Park, NM. Sunland Park is the nearest city to the site, and the county area around Sunland Park is a designated EPA nonattainment area³.

The application site is ~3.6 miles South of Santa Teresa. Santa Teresa was a golf course community (golf club closed ~2013) where my family members lived since 1979. Santa Teresa has never been incorporated as a Village or a City.

Jupiter’s emissions tables show 10,144,115 Tons (20.2 Billion Pounds) of CO₂ will be emitted each year! This CO₂ (which is heavier than air) and other emissions can flow down to Sunland Park in a natural funnel created by the mountains in the area. This narrow mountain pass phenomenon is unusual, and it is what allows the Rio Grande River to flow between the mountains. This pass is why the connected city of El Paso was originally called “El Paso del Norte” (the pass to the North).

Flowing 20.2+ Billion pounds of emissions per year into a small area of mostly low-income recent immigrants is morally wrong. For the New Mexico Environmental Department to permit the flowing of these emissions into a designated EPA Nonattainment zone is malpractice!

I discuss and document the facts in this paper: air quality of the area, Project Jupiter emissions, Sunland Park health risks, potential county and state liabilities, and why the requested permit must not be approved.

I have separately provided details of a path to install renewable energy power that can keep the project on budget and on schedule. There are no “solar showstoppers” and Jupiter can choose to

¹ The Video recorded County Commission meeting is on YouTube.

² New Mexico Climate Action Plan, 2025, released December 19, 2025, Table 2, Summary of Statewide Annual Emissions, Electricity generation 6.60 million metric tons = 7.275 million US tons. $10.144 / 7.275 = 139.4\%$

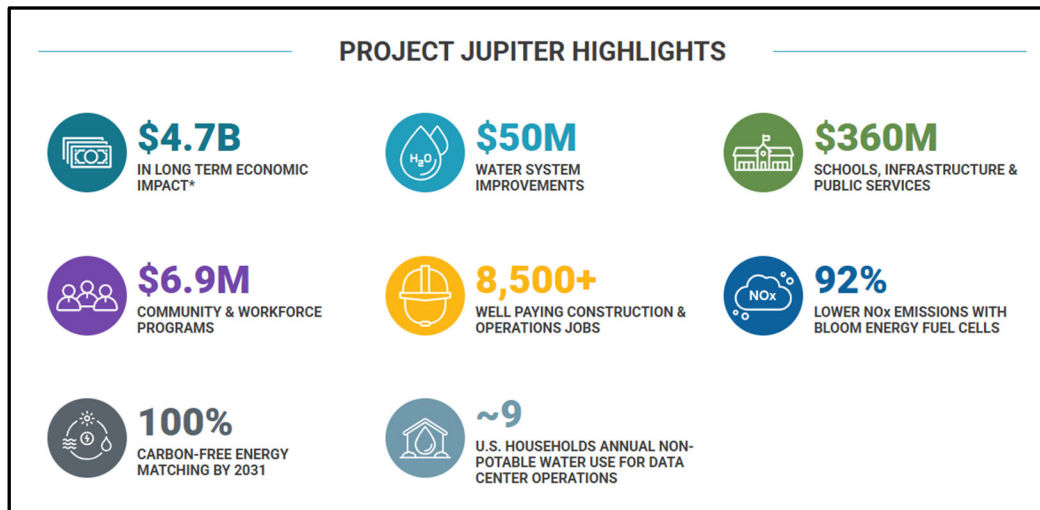
³ Per active designations via the [EPA Green Book](#) and citations from NMED later in this paper.

go to renewable energy⁴, if this permit is not approved. The renewable energy path will save operating costs for Jupiter and reduce electric rates for ratepayers in the area.

For these reasons, I recommend the filed an air quality permit be denied.

II. Project Jupiter Projected Benefits:

The benefits Jupiter suggests are shown in their table below⁵. If achieved, \$4.7B dollars is a boost to New Mexico! The key question is how much will be achieved and will the costs to New Mexico outweigh these benefits. Oracle has already clarified that they will only be there for 17 of the 30 years and so almost half of the \$360M they promise for Schools, infrastructure and public services funding is dependent on future renewals.



Jupiter claims they will reach “100% carbon-free Energy Matching⁶ by 2031” implying improvement in local air quality. “Energy Matching” is a tradeoff by reducing emissions elsewhere to “offset what the Energy Matching company produces. This process can be significant to reduce “Global Emissions”. However, this is not attainable or feasible to help local New Mexico residents for the following reasons:

- A) El Paso Electric Company’s (hereafter “EPE”) total New Mexico coincident peak demand as filed in its 4/2026 rate case is 481,744 MW while Jupiter has filed for 2,462,000 MW of Bloom fuel cells (5X EPE).

More importantly, EPE’s total filed New Mexico ratepayer kWh is 1,846,449,125 (Note: EPE has 43.8% utilization⁷). Jupiter’s air quality filing shows they will produce 21,567,164,000 kWh (24/7 operation, 100% Utilization). Which is 11.6 times the total kWh EPE customers use in New Mexico.

⁴ Oracle issued a 2GW RFP 9/10/2026

⁵ Graphic from Project Jupiter website 8-19-2026

⁶ “Energy Matching” is a process of reducing emissions elsewhere to “offset what the Energy Matching company produces.

⁷ 1,846,465,110 divided by (481,744 x 8,760 hours = 100% utilization) = 43.8%

There cannot be local “100% carbon-free energy matching” to offset emissions, when Jupiter is 11.6 times bigger than the total kWh that is locally used by ratepayers. There simply are not enough local emissions for Jupiter to offset.

- B)** The Energy Transition Act of 2019 has requirements that utilities be at 40% renewable energy by 2025, at 50% renewable by 2030, and 100% non-carbon by 2045.

In EPE’s 2025 sustainability report they show the below table of non-carbon power, showing that in 2025 they are already 41.3% Carbon Free.

Resource Portfolio			
Net Generation and Purchased Power			
Fuel Type	Net Generation and Purchased Power (MWh) ¹		
	2023	2024	2025
Coal	N/A	N/A	N/A
Natural Gas	5,362,373	5,791,330	5,734,528
Nuclear	4,981,410	5,117,323	4,948,104
Renewables (Solar)	18,279	16,081	138,781
Photovoltaic Purchased Power	501,218	635,520	729,118
Purchased Power (other)	2,151,690	2,229,881	2,546,098
Carbon-Free Generation and Photovoltaic Purchased Power %	42.3%	41.8%	41.3%
Natural Gas & Purchased Power %	57.7%	58.2%	58.7%

¹ Net Generation and Purchased Power as reported in EPE's FERC Form 1

A proposal to do “carbon-free Energy Matching” is nonsensical when New Mexico utilities will not have carbon generation to offset.

- C)** Remote “Carbon-Free Energy Matching” hundreds of miles away and mostly out of New Mexico, will not reduce the local pollution” described below. Most importantly remote projects will not reduce the health costs, health damages, or litigation costs the county and state may face from health damages to the Texas, Juarez - Mexico, and New Mexico residents that live a few miles from Project Jupiter.

The suggested benefits listed above are considerable, and if they happen, are of significant value to the local community. The jobs, school benefits, water system improvements, and community donations are wonderful, if they happen. Fuel cell technology does dramatically reduce the water consumption during operations versus water cooled gas turbines, but Bloom said⁸ their water consumption goes up, if not operated continuously and so the claimed water use being the same as “~9 US households” is not realistic. Water consumption during construction is already in the millions of gallons.

Under current conditions, the Jupiter benefits are **not** all contractually assured.

⁸ Bloom technical expert statements to Rocky Bacchus at 2026 Jupiter “Open House and Job Fair” at the Sunland Park Sports Complex June 17, 2026.

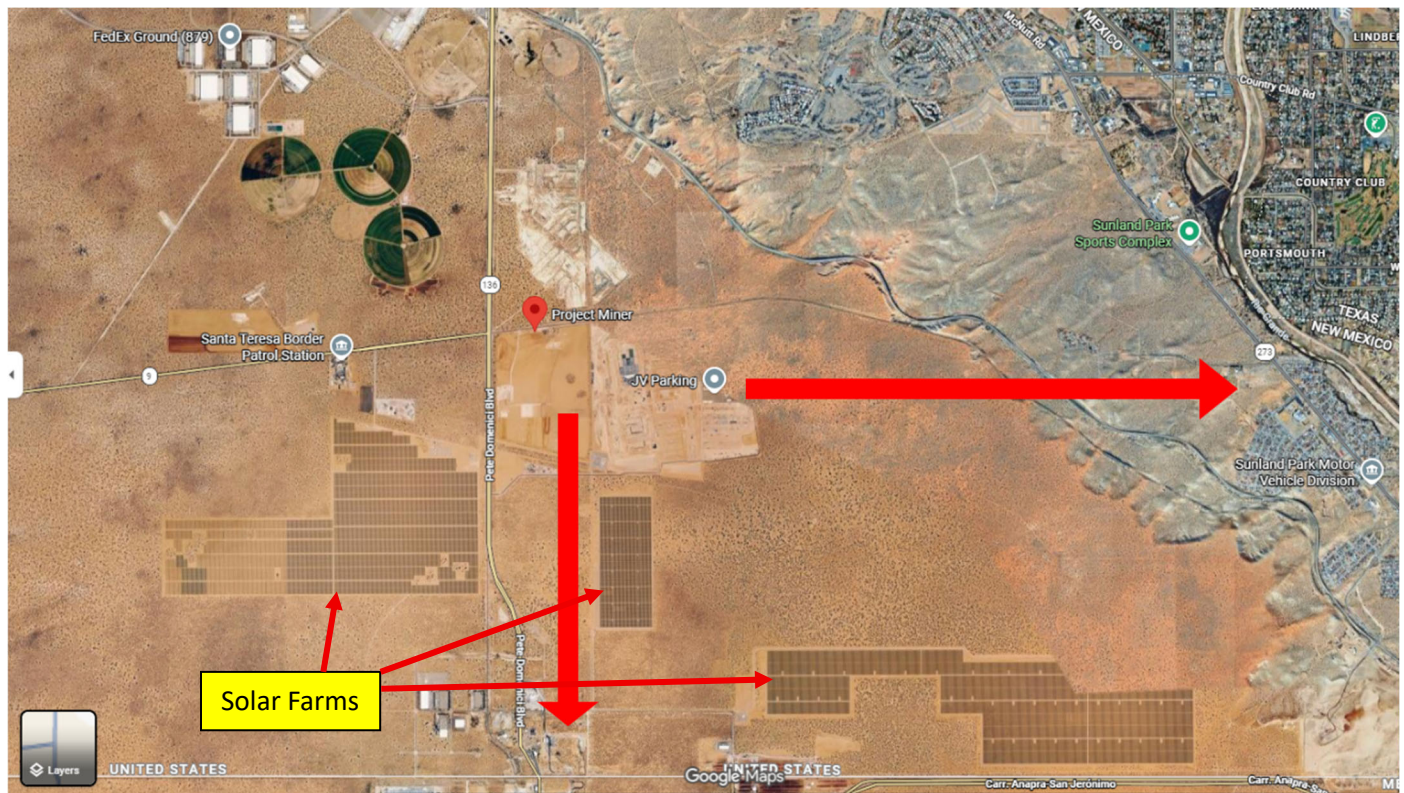
III. Main issues for the community are: 1) Emissions, 2) Water, and 3) Jobs for Dona Ana residents.

Detailed Water and jobs issues are discussed in separate documents, this testimony focuses on emissions.

Emissions Issue:

Lowering Emissions by going from gas turbines to gas fuel cells, does not mean the emissions are “not doing harm” to the area. In other words, “less bad emissions” do not become “good for the area”. The enormous volume of emissions and their impacts are discussed later.

Following is a map of the area where Jupiter and Sunand Park are located. “Project Miner” on this map is the location of Project Jupiter. Please notice Sunland Park is about 3 miles away and about 380 feet below Project Jupiter. Please also notice there are three substantial solar farms nearby.



Carbon Offset

Project Jupiter is not proposing Carbon-Offsets, but as a reference in New Mexico, it takes roughly **1 to 2 acres** of typical dry woodland or sparse forest (such as pinion-juniper or mountain conifers) to sequester one metric ton of CO₂ per year. Slow growth rates and limited moisture across the Southwest mean individual trees capture less carbon annually than those in wetter regions. New Mexico has approximately 25 million acres of total forest and wooded land, covering approximately one-third of the state.

To offset the 10,144,115 tons of CO₂ that is in Jupiter's filing, with a conservative 1.5 acres per ton of CO₂ sequestered, means 15.22 million acres of additional trees would be needed. There are only 2.44 million acres in Dona Ana County and so planting trees everywhere in the county would only cover 16% of the amount needed to sequester Project Jupiter's annual CO₂ output.

Additionally, the water requirements for trees in the mostly desert areas of Dona Ana County that do not have trees now, would massively increase water needs. In the aftermath of the 13-year New Mexico-Texas water rights battle, that was settled this year, there is a requirement to massively decrease water use in New Mexico. Therefore, there is no available water to increase the number of trees.

Site Progress

Below is a Jupiter picture of the site in progress⁹. Billions of dollars have already been committed on the project, **without** an air quality permit. Moving forward without an air quality permit, does not commit the New Mexico Environmental Department to approve a project with a bad emissions output, especially when they can go to renewable energy.



NM Environmental Department Recommended that Dona Ana County near Sunland Park be an EPA designated Nonattainment Area.

Sunland Park, NM is three miles away from and ~380 feet below Project Jupiter. The Federal Register notes that 85% of the country is attainable, but the NMED website clearly states that in 2016 NMED requested that **parts of Dona Ana County near Sunland Park** be designated as an EPA

⁹ Graphic from Project Jupiter website 8-19-2026

ozone Non-Attainment¹⁰ area. From NMED's own recommendation to EPA, the Department is to provide a plan to get back to "attainment". Therefore, it is clearly malpractice to add gigantic amounts of emissions to a Non-Attainment area. See the NMED web page statement below:

Phone: 505-827-2855 | 1-800-219-6157 | Environmental Emergencies: 505-827-9329 (24 hours)

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Nonattainment Areas

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Air Quality contacts

Find a list of Air Quality contacts below:
[Air Quality contacts](#)
Ph: 505-476-4300

[Register for email updates hosted for us by GovDelivery.](#)
The registration process will ask for your email address, then take you through your subscription options for various topics as well as setting individual subscriber preferences.

2015 8-hour Ozone Nonattainment Area in Sunland Park

On October 1, 2015, the United States Environmental Protection Agency (EPA) revised the 8-hour ozone National Ambient Air Quality Standard, or NAAQS, from 0.075 parts per million (ppm) to 0.070 ppm. (80 FR 65291) In 2016, NMED recommended that EPA designate a portion of Doña Ana County near Sunland Park, NM as nonattainment. Based on 2014-2016 ozone monitoring data, EPA designated the area as a marginal nonattainment area on April 30, 2018. (83 FR 25776) Planning is currently underway to submit to EPA the required State Implementation Plan (SIP) for marginal nonattainment areas and to bring this area back into attainment. Please subscribe to [email and text alerts](#) to track progress on SIP development and receive other air quality announcements from the Department.

Restrictions & Impacts for an EPE Designated Nonattainment Area

An EPA designated nonattainment area has stricter requirements, and the county area near Sunland Park should be especially strict due to its natural funnel for heavier emissions to flow through this small, low income, community.

Typical Direct Regulatory Costs and Permitting Impacts for Nonattainment Areas are Shown Below

- **Stricter Permitting Thresholds:** The definition of a "major source" of pollution drops significantly (for example, **in ozone areas shifting from 100 tons per year down to 50 tons**)

¹⁰ **25776 Federal Register** / Vol. 83, No. 107 / Monday, June 4, 2018 / Rules and Regulations Page 1 Column 1: On November 6, 2017, the Environmental Protection Agency (EPA) designated about 85 percent of the country as attainment/unclassifiable and three counties as unclassifiable. On page 45 Table Dona Ana County (Sunland Park Area), NM Nonattainment Marginal. Dona Ana County (part): The area bounded on the New Mexico-Texas state line on the east, the New Mexico-Mexico international line on the south, latitude N31°49'30" on the north, and longitude W106°36'36" on the west.

per year), forcing many more local businesses to secure complex, expensive **Title V federal operating permits**.

- **Title V** federal operating permits are legally binding documents that combine all air pollution control rules and requirements for a major industrial facility into a single comprehensive document. Title V of the 1990 Clean Air Act Amendments are managed by the U.S. Environmental Protection Agency (EPA) along with state and local agencies. These permits do not set new emission limits, instead, they make existing rules clear and enforceable.
- **Emission Offsets:** New or expanding manufacturing and industrial plants must buy or create **emission reduction credits**. For every ton of new pollution they emit, they must offset it by reducing more than one ton from another local source, spiking expansion costs.
- **LAER Control Technology:** New major projects must install the **Lowest Achievable Emission Rate (LAER)** technology, regardless of cost considerations.
- **Severe Penalties and Fees:** Under specific severe or extreme classifications, major stationary sources face heavy annual nonattainment penalty fees per ton of pollutant emitted if the region fails to hit attainment deadlines.

Broader Economic and Infrastructure Costs for nonattainment areas.

- **Business Recruitment Hurdles:** Companies looking to relocate or build new facilities often skip nonattainment areas to avoid bureaucratic delays and high mitigation costs, slowing local job growth.
- **Transportation Red Tape:** Regional transit projects face strict **transportation conformity** evaluations. Highway and transit funding can be delayed or withheld if local plans do not prove the projects align with air cleanup goals.

NMED must follow the laws and first determine if Jupiter has to negotiate an EPA Title V contract to enforce the rules.

EPA 2024 Carbon Capture Rule

- **Docket ID Number:** [EPA-HQ-OAR-2023-0072](#)
- **Regulation Identifier Number (RIN):** 2060-AV09
- **Federal Register Citation:** 89 FR 3979

The Biden Administration 2024 Carbon Capture Rule for New Large Baseload Gas-Fired Power Plants (> 40% Capacity and Jupiter is expected to be ~85%) requires they must install carbon capture and storage for 90% of their carbon dioxide emissions by 2032. This is the current rule, which Co Ops have nationally complained about, but are forced to follow. Jupiter is required to have a carbon capture plan under this rule (rule is still in effect), but Jupiter does not have a 90% carbon capture plan. The New Mexico Environmental Department must require Project Jupiter to provide a carbon capture plan or explain why the Department is not following the current EPA rule.

Repeal of 2024 Carbon Capture Rule is Pending

June 11, 2025: EPA Administrator Lee Zeldin formally proposed the full repeal of the greenhouse gas standards for both new gas and existing coal power plants

February 12, 2026: The EPA finalized a separate, foundational rollback by [rescinding the 2009 Greenhouse Gas Endangerment Finding](#), weakening the legal basis for broad climate regulations.

May 14, 2026: The EPA officially submitted the final power plant repeal package to the White House Office of Management and Budget (OMB) for its final interagency review.

The [National Rural Electric Cooperative Association \(NRECA\)](#) continues to press the Trump administration for an immediate repeal finalization to relieve grid pressure. However, legal analysts report that the administration may be intentionally delaying the publication until after October 2026. While repeal is highly probable it has not occurred, and legal challenges may keep the repeal from ever going into effect. Therefore, the NM Environmental Department must at least, require a valid plan from Jupiter for 90% carbon capture and storage.

Existing Sunland Park Air Quality – per First Street Foundation

According to First Street Foundation (full report attached) climate risk data, Sunland Park, NM (ZIP code 88063) experiences low to moderate air quality risks compared to other regions. Its projected poor air quality days (AQI over 100) rank favorably relative to many other municipal areas and ZIP codes across New Mexico. However, “favorable compared to other areas”, does not mean the air quality is good.

The attached First Street Foundation report states a risk of adding facilities:

“3. Emissions from industrial facilities and transportation Non-environmental factors like industrial, power generation, and transportation emissions can contribute to local particulate matter and ozone levels. Risk Factor assumes these levels will remain constant into the future to isolate the impact of climate change. Other EPA criteria pollutants, including nitrogen oxides, sulfur dioxides, carbon monoxide, and lead can also contribute to air quality levels, but do not have strong environmental connections.

How air quality affects people in this area?

Particle pollution and ozone are a threat to human health at every stage of life, increasing the risk of premature birth, causing or worsening lung and heart disease, and shortening lives. Some groups of people are more at risk of illness and death than others, because they are more likely to be exposed, or are more vulnerable to health harm, or often both.”

The attached First Street Foundation report lists health risks that could increase the county and state’s liability. Below are some detailed risk areas:

“Populations at Risk: Doña Ana County



Pregnancy

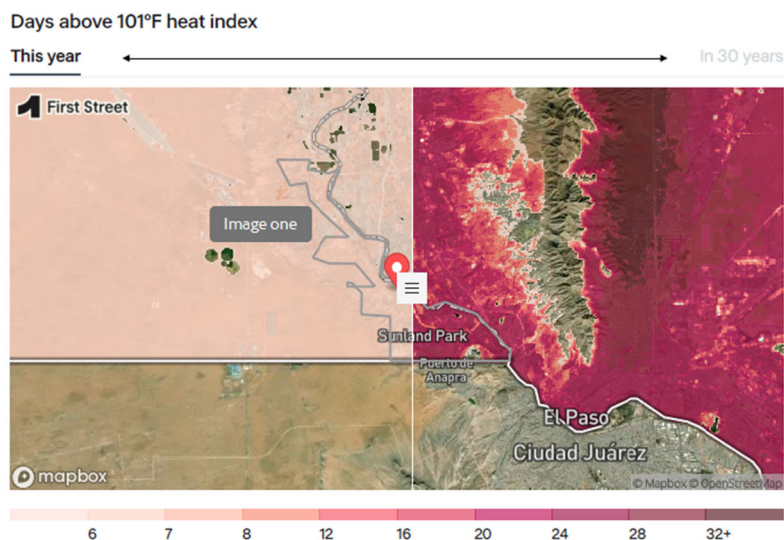
Exposure may result in birth defects, increased infant mortality, lower birth weight, impaired lung development, increased later respiratory morbidity, and early immune alterations.

2,491 out of 221,262 total population

	Children and teens
Long term exposure may increase development of asthma and rate of respiratory infections.	
52,954 out of 221,262 total population	
	Adults with health conditions
Asthmatic adults may experience a decline in lung function and an increase in asthma attacks. Adults with cardiovascular disease may experience a rise in heart attacks and a decrease in life expectancy. COPD patients may experience reduced lung capacity and worsening symptoms.	
Asthma	
16,858 out of 221,262 total population	
COPD	
7,975 out of 221,262 total population	
Cardiovascular disease	
12,171 out of 221,262 total population	
	Elderly (65 and over)
Elderly individuals may experience a worsening of heart disease and stroke, as well as an increase in diabetes and lung diseases such as COPD and asthma.	
36,983 out of 221,262 total population	

The attached First Street Foundation report lists heat-related risks that could increase the county and state’s liability. Below are a heat map and a table of high heat issues:

According to First Street Foundation (full report attached), “Sunland Park has major risk from heat. This is due to "feels like" temperatures increasing, and because 87% of homes in Sunland Park have a major Heat Factor®.”



There is a significant health risk associated with higher temperatures. Climate change numbers are controversial. However, it is not difficult to understand that 20.2 billion pounds of CO₂ per year, which is 39% more than the combined total emissions of all current electric utilities in New Mexico, could create a “greenhouse affect” in Sunland Park that raises their temperatures. It is also understandable that raising the prior record temperature of 114F by 6F to 120F would cause significant health impacts in Sunland Park, NM.



Yucca Growth Infrastructure, LLC “Jupiter” Initial NSR Application April 27, 2026 Numbers & Statements

Application PDF Page 2 Jupiter says:

“The source covered by this application will be permitted to operate continuously (8,760 hours per year) and will be a minor source (i.e., the potential emission rate will be less than 250 tons/year regardless of permit limitations). Emissions of nitrogen oxides (ozone precursor) are less than 40 tons/year.”

Note: these levels are far above what is allowed for **nonattainment areas, such as the Dona Ana County areas near Sunland Park.**

Application Table 2-A Regulated Emissions. Requested Capacity **2,462 MW** of Bloom Model #Energy Server 6.5, which operates at up to 1,800°F.

Section 1-C Facility Input Capacity & Production Rate Application PDF Page 6

2	What is the facility’s maximum production rate, specify units (reference here and list capacities in Section 20, if more room is required)			
a	Current	Hourly: N/A	Daily: N/A	Annually: N/A
b	Proposed	Hourly: 2,462 MW	Daily: 59,088 MWh/d	Annually: 21,567,164 MWh/y

Application PDF Page 73 indicates there will be 2,275 bloom units

Table 2-E: Requested Allowable Emissions

Unit No.	NO _x		CO		VOC		SO _x		PM ¹		PM ₁₀ ¹		PM _{2.5} ¹		H ₂ S		Lead	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
SOFC	8.49	37.20	36.81	161.21	28.31	124.01	0.02	0.08	17.21	75.40	17.21	75.40	17.21	75.40	-	-	-	-

1 Condensable Particulate Matter: Include condensable particulate matter emissions for PM₁₀ and PM_{2.5} if the source is a combustion source. Do not include condensable particulate matter for PM unless PM is set equal to PM₁₀ and PM_{2.5}.

Particulate matter (PM) is not subject to an ambient air quality standard, but it is a regulated air pollutant under PSD (20.2.74 NMAC) and Title V (20.2.70 NMAC). The Energy Server System equipment vendor maintains that there are zero PM emissions from its equipment. Extant reference method testing has been used by the applicant to conservatively estimate emissions, given test method limitations. Vendor indicates that extant testing may exhibit positive sampling method bias and reflects filterable particulate matter from intake air past through the system. For that reason, the fuel cell system equipment vendor does not specify particulate emission factors.

Fuel cells are not a “combustion source” of PM_{2.5}. Pursuant to 20.2.2.7, 20.2.74.7(AS)(6), and 20.2.72.203.A(3) NMAC, particulate emissions are a “regulated new source review pollutant” which include certain “gaseous emissions from a source or activity” and applicant must submit “all emissions information, calculations and computations” for computing “maximum” particulate matter emissions from the source. To be conservative, applicant uses an emission factor for condensable particulate matter based on available source test data.

Table 2-J: Fuel

Specify fuel characteristics and usage. Unit and stack numbering must correspond throughout the application package.

Unit No.	Fuel Type (low sulfur Diesel, ultra low sulfur diesel, Natural Gas, Coal, ...)	Fuel Source: purchased commercial, pipeline quality natural gas, residue gas, raw/field natural gas, process gas (e.g. SRU tail gas) or other	Specify Units				
			Lower Heating Value	Hourly Usage	Annual Usage	% Sulfur	% Ash
SOFC	Natural Gas	Pipeline Quality Natural Gas / Purchased Commercial	1,020 Btu/scf	15.61 MMscf/h	136,782.34 MMSCF/yr	0.75 gr S /100 scf	0.0%

Application PDF Page 138 has the below table showing **10,144,115 Tons** (20.2 Billion Pounds) of CO₂ emitted per year!

Table 2-P: Greenhouse Gas Emissions

Applications submitted under 20.2.70, 20.2.72, & 20.2.74 NMAC are required to complete this Table. Power plants, Title V major sources, and PSD major sources must report and calculate all GHG emissions for each unit. Applicants must report potential emission rates in short tons per year (see Section 6 a for assistance). Include GHG emissions during Startup, Shutdown, and Scheduled Maintenance in this table. For minor source facilities that are not power plants, are not Title V, or are not PSD, there are three options for reporting GHGs 1) report GHGs for each individual piece of equipment; 2) report all GHGs from a group of unit types, for example report all combustion source GHGs as a single unit and all venting GHG as a second separate unit; OR 3) check the following box ☐ By checking this box, the applicant acknowledges the total CO₂e emissions are less than 75,000 tons per year.

		CO ₂ ton/yr	N ₂ O ton/yr	CH ₄ ton/yr	SF ₆ ton/yr	PFC/HFC ton/yr ²										Total GHG Mass Basis ton/yr ⁴	Total CO ₂ e ton/yr ⁵
Unit No.	GWPs ¹	1	265	28	22,800	footnote 3											
	mass GHG	10,144,115	-	-	-	-										10,144,115	
SOFC	CO ₂ e	10,144,115	-	-	-	-											10,144,115

¹ **GWP** (Global Warming Potential): Applicants must use the most current GWPs codified in Table A-1 of 40 CFR part 98. GWPs are subject to change, therefore, applicants need to check 40 CFR 98 to confirm GWP values.

² For **HFCs** or **PFCs** describe the specific HFC or PFC compound and use a separate column for each individual compound.

³ For each new compound, enter the appropriate GWP for each HFC or PFC compound from Table A-1 in 40 CFR 98.

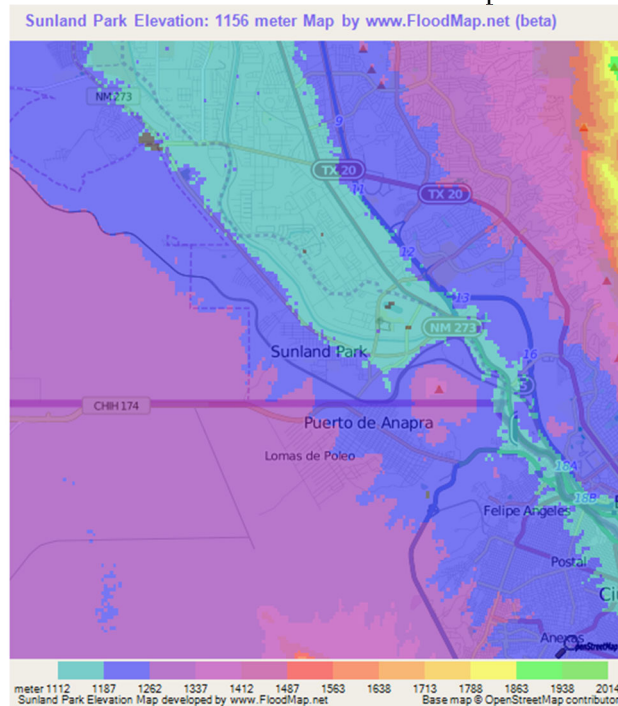
⁴ Greenhouse gas emissions on a **mass basis** is the ton per year greenhouse gas emission before adjustment with its GWP.

⁵ **CO₂e** means Carbon Dioxide Equivalent and is calculated by multiplying the TPY mass emissions of the greenhouse gas by its GWP.

Topography Issue

Having lived in Santa Teresa for over 20 years, while working in a high VOC emitting business in Sunland Park, I observed that the topography in the area creates a natural funnel for gases that are heavier than air to flow down through and concentrate in Sunland Park, NM. Mountains, valleys, wind patterns and temperature inversions can sometimes inhibit dispersion or channel polluted air, producing higher local concentrations of pollutants. The Franklin Mountains (New Mexico & El Paso, Tx) and the Sierra Juarez, Mexico Mountains rise to over 5,000 ft altitude but have a gap that lets the Rio Grande River flow between them. This “gap funnel” area is where Sunland Park is. There is a legitimate concern for pollutants such as NO_x, particulate matter, carbon monoxide, volatile organic compounds and secondary ozone formation. Given Sunland Park's history of ozone and particulate-matter problems, it isn't a trivial question. EPA itself recognizes that the region's topography influences pollutant transport. A study should be required and use site-specific meteorological and complex-terrain dispersion modeling to determine whether emissions could increase ground-level pollutant concentrations in Sunland Park, El Paso, or Juárez. The New Mexico Environment Department would engage in malpractice if they do not require a sophisticated study be engaged to investigate the probability of causing serious harm, before granting an air quality permit.

The below topographic map uses colors to show elevations. Please consider the “green areas” which illustrates the “gap funnel” and how it will cause concentration of emissions from Jupiter to accumulate in Sunland Park, NM.



Order of Magnitude Issue

The New Mexico Electricity Generation Power Plants that power the state, are fueled by coal and natural gas and generate 7.275 million US tons of CO₂ per year¹¹. Jupiter’s air quality application shows 10.144 million tons of CO₂ per year, which is 139% of all existing NM electric utilities combined.

Jupiter’s application shows the following amounts of emissions which are heavier than air:

10,144,115 tons per year - Carbon dioxide CO₂,
265 tons per year - Nitrous Oxide N₂O,
22,800 tons per year - Sulfur Hexafluoride (SF₆)
10,167,180 tons per year combined

If all 10,167,180 tons per year, flows into Sunland Park each year, this is like a semi-truck dumping a 38,687 pound load of emissions into Sunland Park **each minute**, 24 hours a day, 365 days a year.



¹¹ New Mexico Climate Action Plan, 2025, released December 19, 2025, Table 2, Summary of Statewide Annual Emissions, Electricity generation 6.60 million metric tons = 7.275 million US tons = 14.55 billion pounds.

The application also shows emissions of 28 tons of Methane (CH₄) per year. Methane is lighter than air.

The massive emissions in Jupiter's above Table 2-E (NO_x, many VOCs, Sox, and particulates) are heavier than air and may flow down from Project Jupiter (at 4,117 feet altitude) to Sunland Park (with altitude of 3,736 feet near the Rio Grande River). This 381-foot drop from the plateau Jupiter is on, to the populated areas of Sunland Park, may bring massive amounts of emissions and concentrate them in Sunland Park. This air quality permit, if approved, could exacerbate Sunland Park's EPA non-attainment status. This overwhelming volume of emissions can lead to significant health issues.

Likewise, the 381-foot drop from the plateau Jupiter is on, to the populated areas of Sunland Park may bring massive amounts of greenhouse gases into the Sunland Park area and exacerbate the already severe heat issues in Sunland Park. Over time, the greenhouse gas effects may raise the Sunland Park summer temperatures by 6 degrees. Moving the area record temperature from 114F to 120F can lead to significant health issues. Please note that this "greenhouse effect" trapping local heat is different from the direct temperature emissions from Jupiter.

Please note that the amount of emissions allowed in a flat open space are very different from the amount of emissions allowed in a concentrating funnel (naturally created by mountains) harming a low-income community. The potential impact on Sunland Park means that even without the nonattainment rules, the Department must consider far lower emissions to be required in the area.

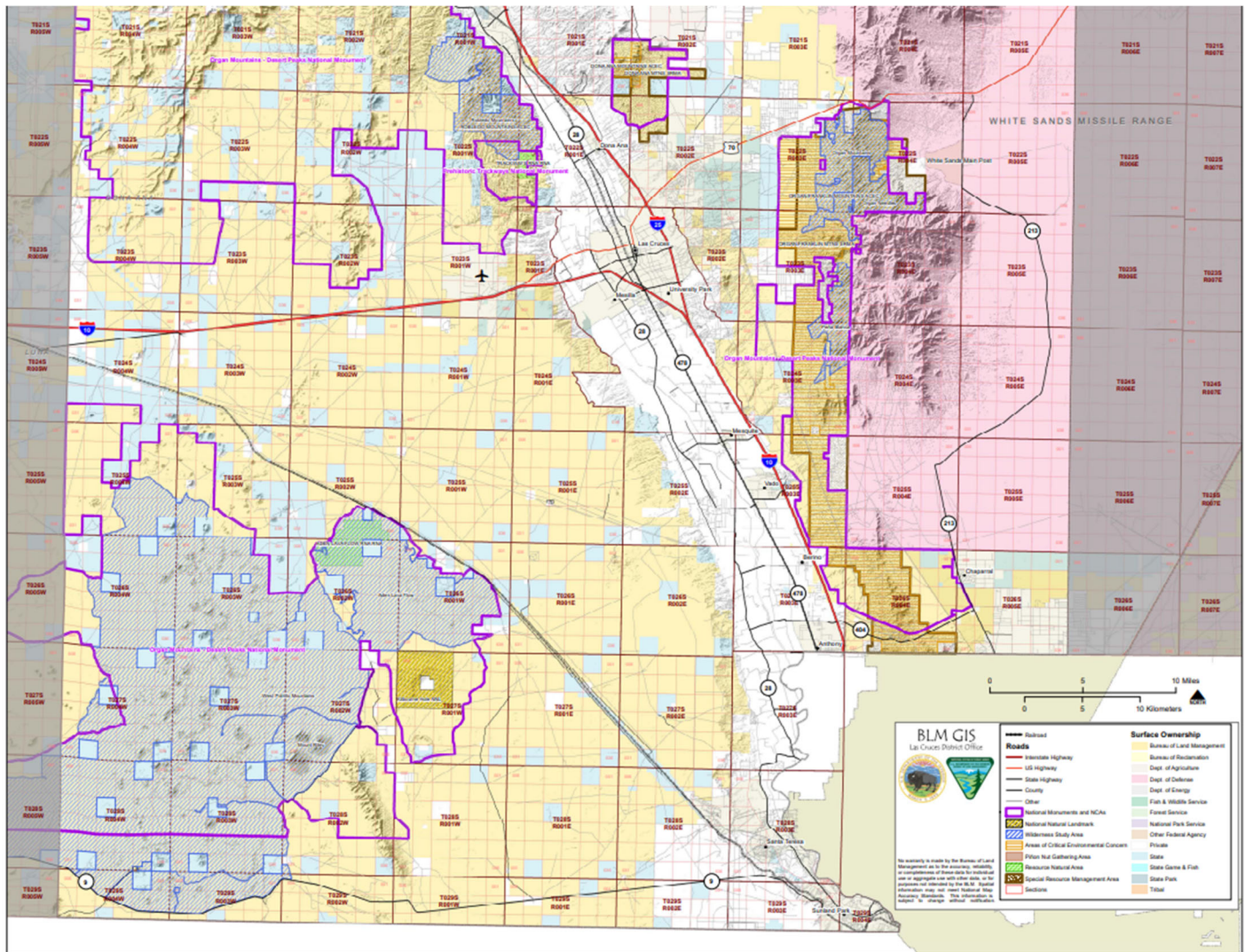
Solar Power can be Installed and Connected to Jupiter

Project Jupiter is not "stuck" if the current air quality permit is denied. There are land, transmission pathways, easement paths, and interconnections possible to allow Jupiter to go to 100% solar power.

Land, Transmission, and Interconnection

1. **Land** – there are substantial amounts of Private Land, State Land Trust, and Federal (BLM) land in the area.
 - i. Private land is probably the most expensive for the land that is reasonable to transmit power to Jupiter (white areas on below map).
 - ii. State Trust Land is available to be converted from "grazing lease" to "solar lease". This land can be leased long term (up to 99 years) and may be lower cost than private land can be obtained for (blue areas on below map). Political effort is needed to work with the State Land Office.
 - iii. Federal BLM land has the most land in the area available to be converted from "grazing lease" to "solar lease". BLM land may be the least expensive to lease long term. Advantageously there is a process in place and price established to lease the BLM land (yellow areas on below map).

The author has spoken with a major private landowner, the State Trust Land Office, and the BLM officials that would convert land from "grazing" to solar. Clearly the land is available. The map below shows private, state, and BLM land. Less than one of the below numbered blocks (each block has 36 each, 640 acre sections) could hold all the solar Jupiter requires to go to 100% solar power.



2. Transmission, and Interconnection

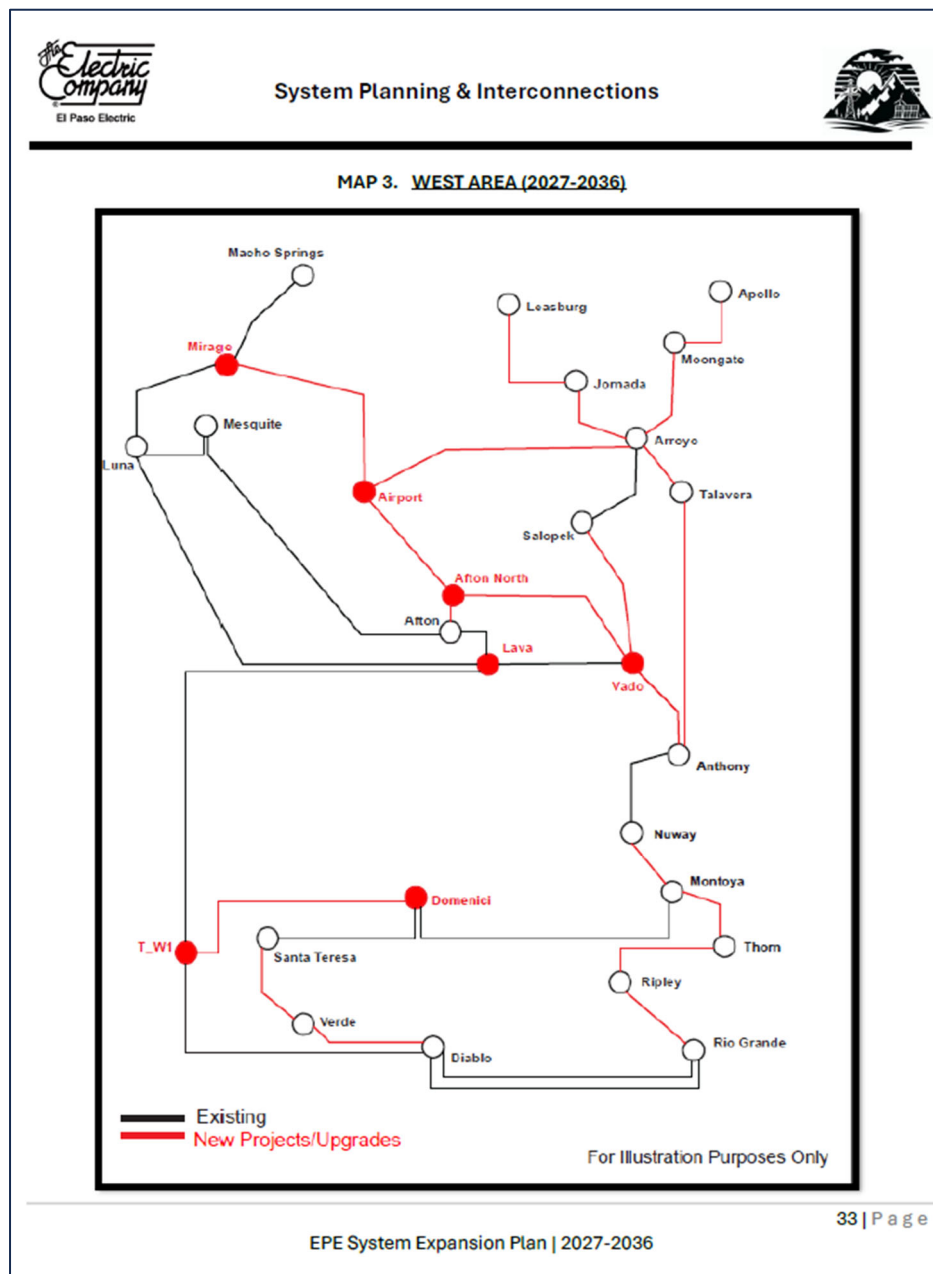
There is an El Paso Electric 345kV line that goes right past the sub-station being built for Project Jupiter, which apparently has a capacity of 2,320 MVA. Thus, there is apparently a ready way for EPE to connect to Jupiter. The picture below is of some of the EPE transmission lines in the area of Project Jupiter.



The below pictures are at the Project Jupiter substation, and the sign warns of the overhead EPE transmission line. It appears EPE has already made it very quick and easy to connect to Jupiter.



The map below shows El Paso Electric's existing and planned transmission lines.



3. Easements Available

There are small power lines along highway 9 that go from huge amounts of state and federal land to Project Jupiter. There is plenty of space in the setbacks (from the road to the fences for grazing) to put dedicated transmission lines in to connect Jupiter to a set of solar farms large enough to supply Jupiter.

IV. Solar Plans have been supplied to Jupiter

Three separate plans that transform Jupiter to 100% renewable power, eliminate emissions, and cut water usage, have been submitted to Jupiter by local experts.

Solar Plan Costs

The plans would reduce total project Jupiter costs and are well within Jupiter's first phase committed funding of \$50 Billion.

V. Potential Costs of Approving Jupiter Air Quality Plan "As Is"

The State and County will not be able to claim they did not know the risks the current air quality permit presents. Knowingly approving, air quality permits that are later determined to cause birth defects and other issues listed in the First Street reports could cost billions more in damages the state must pay, than Jupiter's economic development projections offer.

VI. Recommendation:

NMED must order a study using site-specific meteorological and complex-terrain dispersion modeling to determine whether emissions could increase ground-level pollutant concentrations in Sunland Park, El Paso, or Juárez, before further considering giving Jupiter a permit based on Jupiter's current application. Additionally, NMED must require Jupiter to obtain EPE Title V federal operating permits.

If NMED is required to make a final decision in November, before a full study can be done; NMED must recognize that Jupiter's emissions, as filed in their air quality permit, will exacerbate the Sunland Park EPA nonattainment area. Jupiter does not have EPE Title V federal operating permits for its major stationary sources, which will probably face heavy annual nonattainment penalty fees per ton of pollutant emitted. Jupiter does not have a CO₂ carbon capture and storage plan (to meet the current – not yet repealed - EPA rule). For all these reasons the existing air quality application must be denied.

Respectfully Submitted,



Rocky Bacchus
575-652-0010

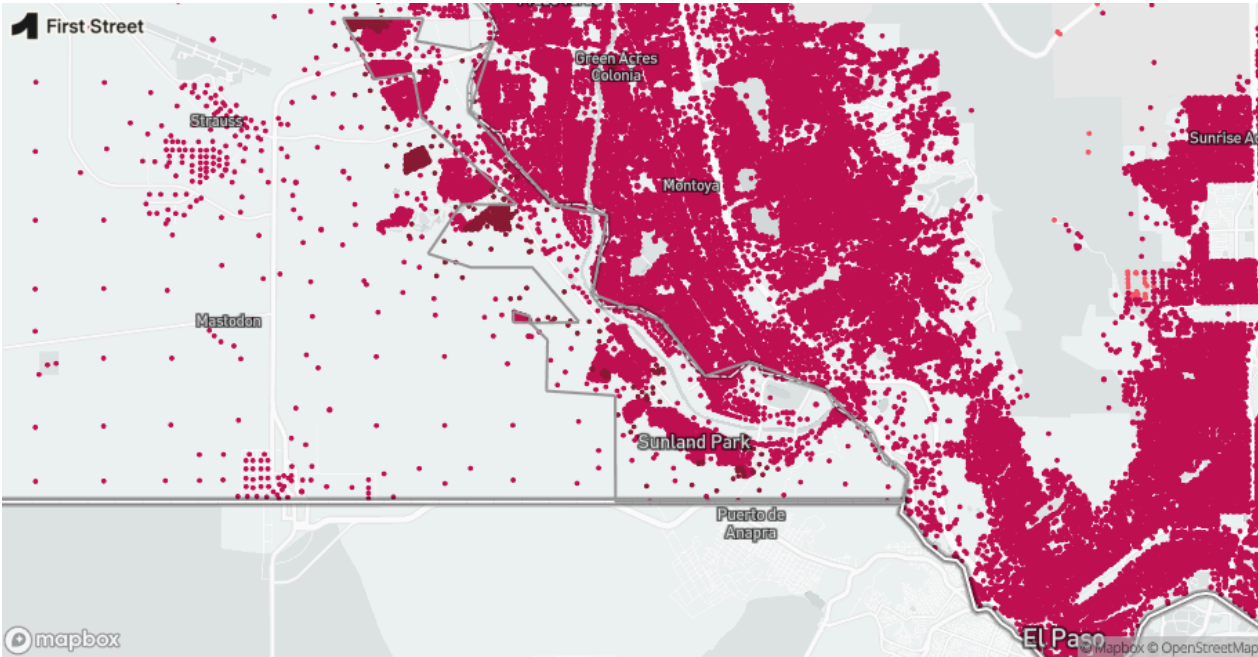
Note, my experience and qualifications as an expert are supplied separately.

Does Sunland Park have Heat Risk?

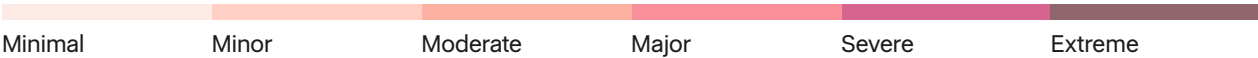
Major

HEAT
FACTOR®

Sunland Park has major risk from heat. This is due to "feels like" temperatures increasing, and because 87% of homes in Sunland Park have a major Heat Factor®.



Properties at risk from heat



Heat Factor: Minimal

Heat Factor: Minor

Find the Extreme Heat Risk for Any Property

Discover its current and future risk from extreme heat, historic hot days, cooling cost estimates and understand steps you can take to reduce risk.

Search an address

Q

Want More Data?



First Street™ is the leading provider of climate risk data. First Street data is licensed by leading government agencies, banks, and corporations. To put our data to work for your organization, contact our sales team.

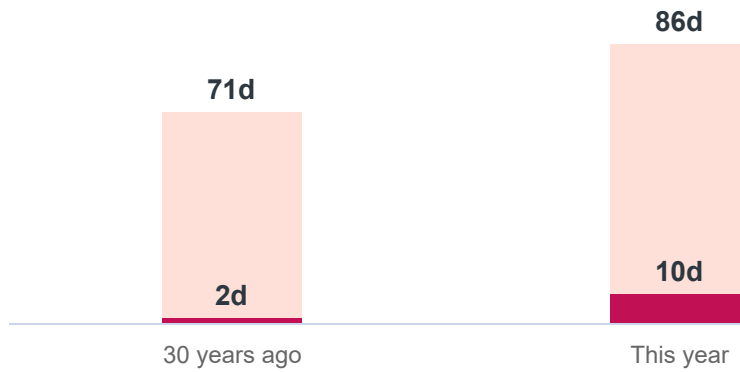
0 out of 6,623 properties at risk	0 out of 6,623 properties at risk	SEE OUR DATA PRODUCTS
Heat Factor: Moderate	Heat Factor: Major	
0 out of 6,623 properties at risk	5,735 out of 6,623 properties at risk	
Heat Factor: Severe	Heat Factor: Extreme	
888 out of 6,623 properties at risk	0 out of 6,623 properties at risk	

Understanding the Changing Heat Patterns in Sunland Park

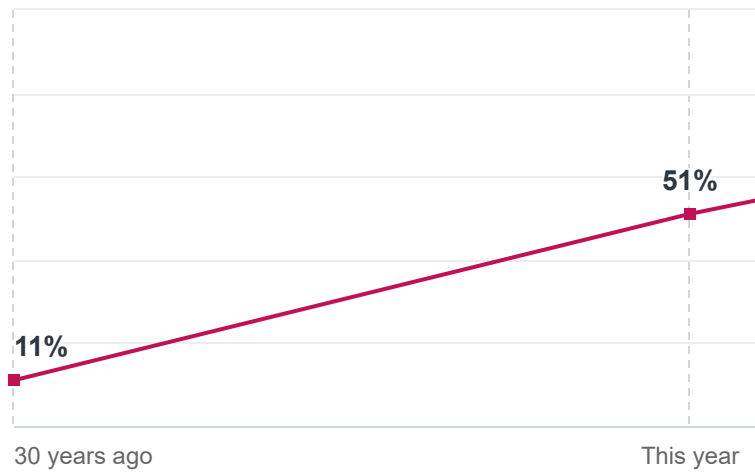
With increasing average temperatures, dangerously hot days and heatwaves may occur more often. Temperatures exceeding 90°F can be physically hazardous for high-risk individuals. When temperatures exceed 100°F it can be dangerous for everyone.

Number of Days per Year

Health caution: 90-100°F Dangerous: >100°F



Likelihood of 3+ Day Heatwave

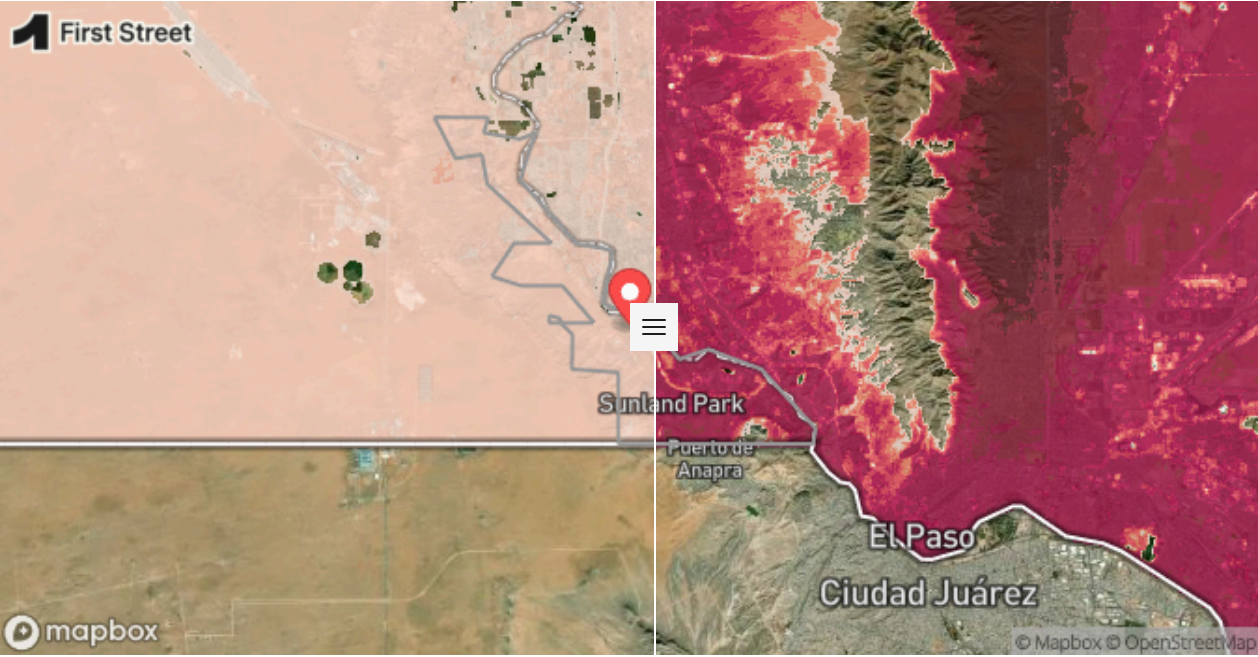


How many hot days will Sunland Park have?

A hot day in Sunland Park is considered to be any day above a “feels like” temperature of **101°F**. Sunland Park is expected to experience **7 hot days** this year. Due to a changing climate, Sunland Park will experience **25 days** above **101°F** in 30 years.

Days above 101°F heat index

This year ←————→ In 30 years



Total hot days

7 days

Today

25 days

In 30 years

Understanding Vulnerability Factors in Heat-Prone Areas

While an area's heat trends are primarily determined by its latitude, exposure to sunlight, elevation, and climate, there are a number of factors that can exacerbate the effects of heat across an area, creating what are known as heat islands. Daytime maximum temperatures within a heat island can vary by as much as 7 degrees from the surrounding neighborhood or city, and more importantly these areas have a notable ability to retain heat through the nighttime, greatly increasing the cost of cooling for homes and businesses located. Common causes of the heat island effect include, but are not limited to:



1. Neighborhood construction materials

Manmade materials such as asphalt, concrete, and glass trap and reflect heat, causing heat to radiate in areas that are densely built up with these materials even after sunset.

2. City planning and layout

The way buildings are arranged and spaced across an area can create pockets of insulation that trap heat and prevent airflow that would release it, exacerbating heat in the process.

3. Distance to water and vegetation

Unlike manmade materials, trees, plants, and bodies of water absorb heat from sunlight and even reduce the surrounding air temperature. Areas that are far from both water and vegetation are more likely to experience heat island effects.

4. Human activities

Operating vehicles, use of air-conditioning, and industrial activities all release heat as a by-product, which means that areas where these activities are abundant will experience more severe heat island effects.

Impact of Heat on Sunland Park's Energy Consumption

One of the resulting effects of heat is the increase in energy usage that occurs as homes and businesses make an effort to keep cool indoors. Based on heat projections for this year in **Sunland Park**, it is estimated that the use of air conditioning would cause an increase in energy consumption on **246** days annually.

This risk may become even more pronounced in 30 years, as the number of cooling days is expected to increase to **261** days per year. This increase in need for cooling is expected to increase Sunland Park's electricity usage for cooling purposes by **11.90%**.

Number of cooling days this year vs. in 30 years

246

Today

261

In 30 years

Heat and Health: Implications for Sunland Park

Heat can pose threats to health and human safety such as fatigue, heat stroke, heat exhaustion, and heat cramps. During a heat wave, “feels like” temperatures can also reach levels that cause hospitalization and even death for certain individuals. Learn more about the health risks that could affect below.



Low Risk



Medium Risk



High Risk

80°

Estimated days above

This year

185

In 30 years

200

↑ 15d

80° Health risks



Fatigue & dehydration



Cramps



Heat exhaustion



Heat stroke



Death

90°

Estimated days above

This year

96

In 30 years

120

↑ 24d

90° Health risks



Fatigue & dehydration



Cramps



Heat exhaustion



Heat stroke



Death

100°

Estimated days above

This year

10

In 30 years

32

↑ 22d

100° Health risks



Fatigue & dehydration

Cramps

Heat exhaustion

Heat stroke

Death

125°

Estimated days above

This year

1

In 30 years

↑ 1d

125° Health risks



Fatigue & dehydration

Cramps

Heat exhaustion

Heat stroke

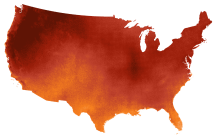
Death

Exploring the Reasons Behind Changing Heat Risks

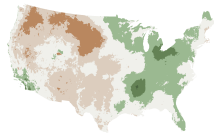
Heat risks are changing because of the environment. A changing environment means higher average temperatures and increased humidity, which has a compounding effect on heat indexes that make risky heat events possible.

As the global temperature rises, it can be important to understand what factors contribute to heat risk.

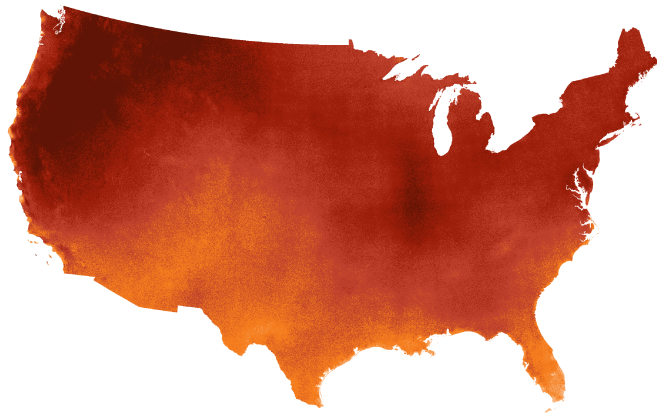
Learn more about the environmental factors increasing heat risk [here](#).



Rising temperatures

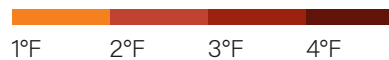


Changing humidity



Change in daily high temperature (°F) this year to 30 years

As average temperatures increase around the globe, hot days increase in both frequency and intensity. Conservative estimates show that temperatures across the United States are projected to increase by at least 2.5 degrees Fahrenheit over the course of the next 30 years.



Climatology Lab MACAv2
downscaled GCM, based on historical period 1950-2005 and adjusted to future conditions using the RCP4.5 emissions scenario.

Additional Community Measures to Address Extreme Heat

There are things communities can do before, during, and after a heat wave to protect residents, families, homes, businesses, and the community.



Before

Prepare your community for the next heat wave by creating new urban green spaces, replacing asphalt with less absorbent materials, and funding cool roof initiatives.



During

Help community members stay cool when the temperature rises by setting up cooling centers, protecting energy systems, and checking on vulnerable residents.

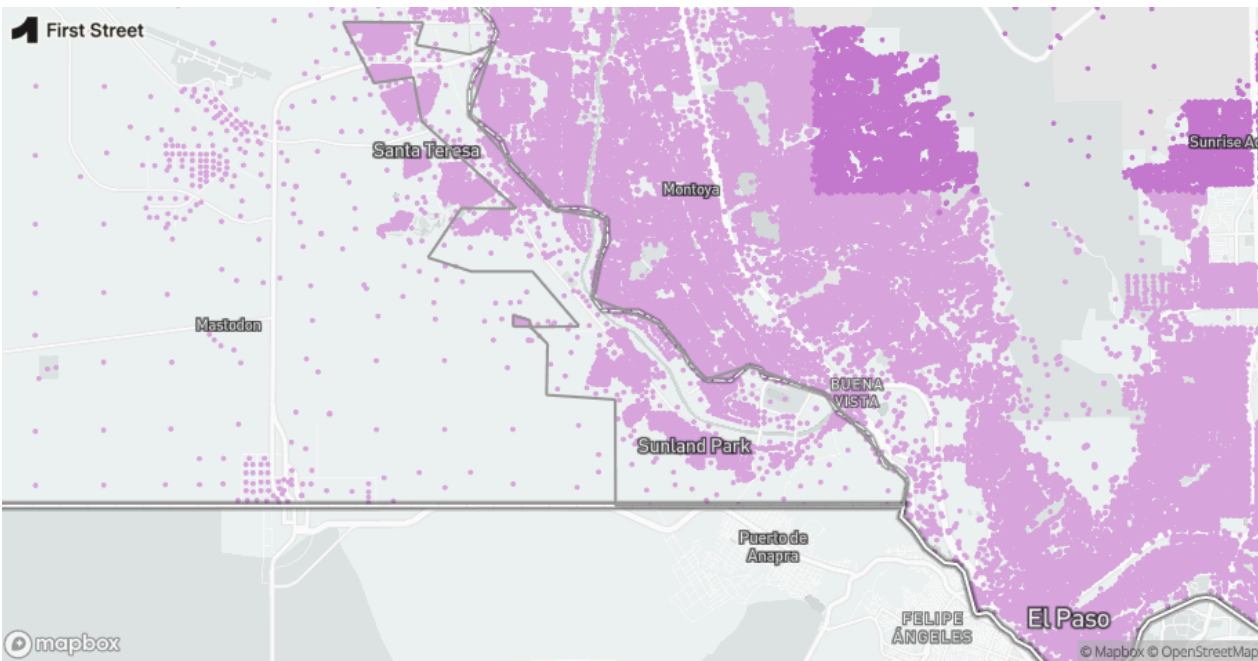
Explore more solutions [here](#).

Does Sunland Park have risk?

Minor



Sunland Park has a **minor risk** from air quality. The number of poor air quality days with an Air Quality Index (AQI) over 100 in Sunland Park will be **higher** in 30 years. Based on the the number of poor air quality days, Sunland Park has **worse** air quality than **84%** of cities in New Mexico.



Properties at risk from air



Air Factor: **Minimal**

0 out of 6,627 properties at risk

Air Factor: **Minor**

6,627 out of 6,627 properties at risk

Air Factor: **Moderate**

0 out of 6,627 properties at risk

Air Factor: **Major**

0 out of 6,627 properties at risk

Air Factor: **Severe**

0 out of 6,627 properties at risk

Air Factor: **Extreme**

0 out of 6,627 properties at risk

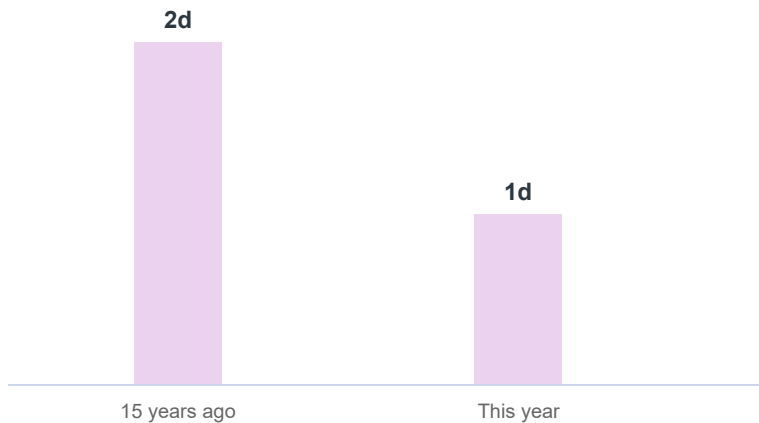
Understanding Air Quality in Sunland Park

Air quality in most areas of the United States has been on a steady improvement since the end of the 20th century, with stricter regulations on polluters and growing investment in low-emissions technology reducing the amount of particulate matter and ozone in the atmosphere. This is changing as the environment warms.

Warmer and drier conditions promote the formation of **ground-level ozone** and result in larger, more frequent wildfires in wilderness areas, producing **particulate matter** that can travel thousands of miles and affect air quality across the country.

A poor air quality day in **Sunland Park** is considered to be any day with AQI over 100. Sunland Park is **expected to experience 1 days** this year with an AQI over 100 this year, and **2 days in 30 years**.

Days with AQI over 100 per year



[Flood Factor](#) [Fire Factor](#) [Air Factor](#) [Heat Factor](#)

The EPA sets standards for areas based on whether their air quality meets or exceeds the National Ambient Air Quality Standards (NAAQS), showing regions where pollution levels are safe for people and the environment.

PM2.5 (Smoke): **Meets Standards**

Ozone (Smog): **Partially Meets Standards**

The EPA currently designates this area as not meeting standards for ozone. High levels of ozone can cause can cause asthma attacks and and has been linked to cardiovascular harm. [Learn more](#)

Find the Air Quality Risk for Any Property

Discover its current and future risk from poor air quality, air quality history, health impacts and understand steps you can take to reduce risk.



How does air quality vary across New Mexico?

Based on its number of poor air quality days **Sunland Park** has **worse** air quality than **84%** of cities in **New Mexico**. The city of **Los Alamos** has the worst air quality and will see **11**

Want More Data?



days at or above an AQI of 100 this year and 13 days 30 years from now.

Cities in New Mexico with the best air quality

[Albuquerque](#), [Rio Rancho](#), [Rio Rancho Estates](#)

Cities in New Mexico with the worst air quality

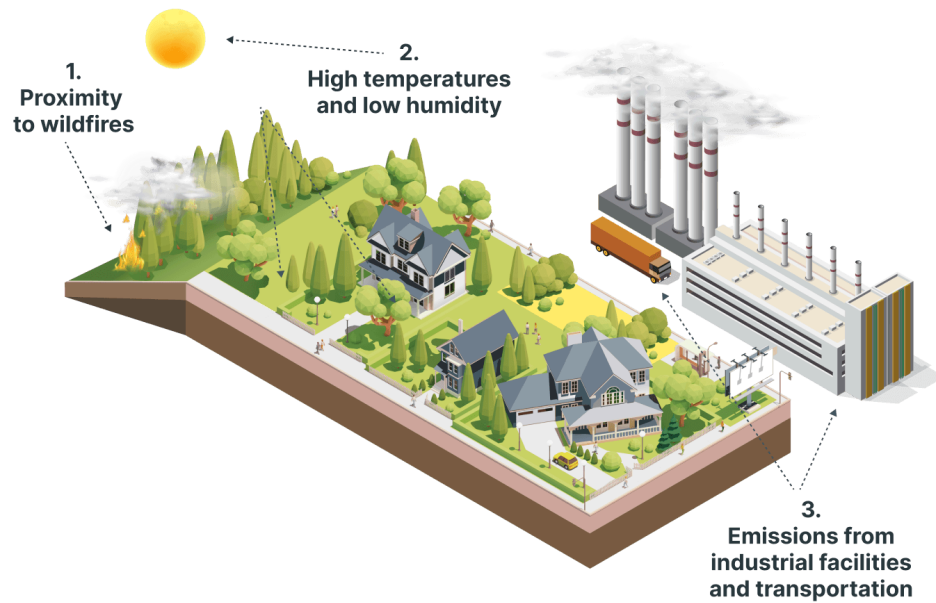
[Los Alamos](#), [White Rock](#)

What causes air pollution?

There are a number of factors that influence a locations air quality such as natural factors like wind patterns, temperature, and humidity, as well as human activities like transportation and industrial emissions. It is important to monitor and address these factors in order to maintain healthy air quality for both human health and the environment.

First Street™ is the leading provider of climate risk data. First Street data is licensed by leading government agencies, banks, and corporations. To put our data to work for your organization, contact our sales team.

SEE OUR DATA PRODUCTS



1. Proximities to wildfires

Wildfire smoke is a major contributor to atmospheric particulate matter 2.5 in the US, and recent increases have undone decades of improved air quality. Long-term exposure can cause health impacts, and large wildfires burning for extended periods of time can produce particle emissions that travel long distances.

Risk Factor TM has found no historic records of wildfire events near Sunland Park between 1984 and 2022, but that doesn't mean your area has never been impacted in the past.

[Learn more about historic wildfire events.](#)

2. High temperatures and low humidity

High temperatures, low humidity, and vapor pressure deficit all contribute to increased ozone levels. High temperatures speed up the chemical reactions that form ozone, while low humidity can extend the lifetime of ozone, and vapor pressure deficit modulates the uptake of ozone by trees through stomata. Ozone is a key component of what is commonly referred to as 'smog', or a hazy form of air pollution with reduced visibility.

A hot day in **Sunland Park** is considered to be any day above a “feels like” temperature of **101°F**. **Sunland Park** is expected to experience **7 hot days** this year. Due to a changing climate, **Sunland Park** will experience **25 days** above **101°F** in 30 years.

[Learn more about heat in your area.](#)

3. Emissions from industrial facilities and transportation

Non-environmental factors like industrial, power generation, and transportation emissions can contribute to local **particulate matter** and **ozone levels**. Risk Factor assumes these levels will remain constant into the future to isolate the impact of climate change. Other EPA criteria pollutants, including nitrogen oxides, sulfur dioxides, carbon monoxide, and lead can also contribute to air quality levels, but do not have strong environmental connections.

How air quality affects people in this area?

Particle pollution and ozone are a threat to human health at every stage of life, increasing the risk of premature birth, causing or worsening lung and heart disease, and shortening lives. Some groups of people are more at risk of illness and death than others, because they are more likely to be exposed, or are more vulnerable to health harm, or often both.

Select demographic data below for **Sunland Park** to understand health implications during a bad AQ days at this property. [Learn more from the American Lung association](#)

Populations at Risk

County: **Doña Ana County**



Pregnancy

Exposure may result in birth defects, increased infant mortality, lower birth weight, impaired lung development, increased later respiratory morbidity, and early immune alterations.

2,491 out of **221,262** total population



Children and teens

Long term exposure may increase development of asthma and rate of respiratory infections.

52,954 out of **221,262** total population



Adults with health conditions

Asthmatic adults may experience a decline in lung function and an increase in asthma attacks. Adults with cardiovascular disease may experience a rise in heart attacks and a decrease in life expectancy. COPD patients may experience reduced lung capacity and worsening symptoms.

Asthma

16,858 out of **221,262** total population

COPD

7,975 out of **221,262** total population

Cardiovascular disease

12,171 out of **221,262** total population



Elderly (65 and over)

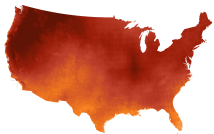
Elderly individuals may experience a worsening of heart disease and stroke, as well as an increase in diabetes and lung diseases such as COPD and asthma.

36,983 out of **221,262** total population

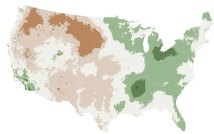
Why is air quality risk changing?

A changing environment means warmer and drier conditions that increase the likelihood of wildfire smoke and the formation ozone which contributes to poor Air Quality Index days.

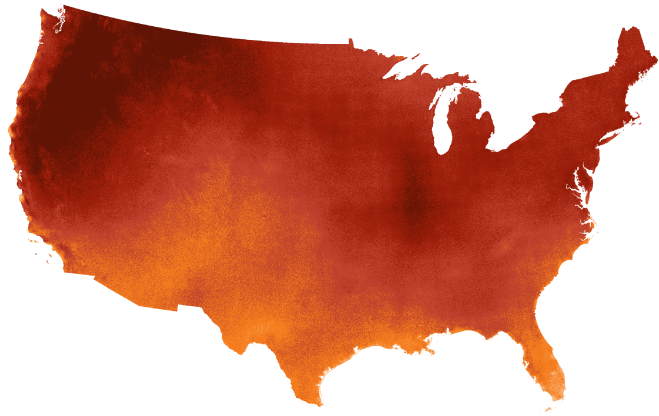
Learn more about the environmental factors contributing to worse air quality due to wildfires and ozone [here](#).



Rising Temperatures

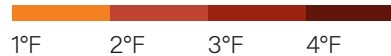


Changing Humidity



Change in daily high temperature (°F) this year to 30 years

As average temperatures increase around the globe, hot days increase in both frequency and intensity. Conservative estimates show that temperatures across the United States are projected to increase by at least 2.5 degrees Fahrenheit over the course of the next 30 years.



Climatology Lab MACAv2
downscaled GCM, based on historical period 1950-2005 and adjusted to future conditions using the RCP4.5 emissions scenario.

What else can communities do?

Individuals, mayors, governors, and congress can work together on precautions before poor air quality days, and create plans that future-proof communities.



Before

Explore how individuals can reduce their vulnerability to polluted air.



During

Tips for keeping your home safe against poor air quality days.



After

Learn how to recoup and recover after poor air quality days have passed as a community.

Explore more solutions [here](#).
