



**REGENERATE  
CALIFORNIA**  
POWER UP CLEAN ENERGY | POWER DOWN DIRTY GAS



**Report  
2024**

# **THE NOTORIOUS NINE: GAS PLANT POLLUTION IN ENVIRONMENTAL JUSTICE COMMUNITIES**

***Key Findings on NO<sub>x</sub> Exceedances and the  
Hidden Pollutants Affecting Public Health***

REGENERATE CALIFORNIA



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## Disclaimer

This study was commissioned by Regenerate California, a coalition led by the California Environmental Justice Alliance and the Sierra Club, in partnership with the Central Coast Alliance United for a Sustainable Economy, Communities for a Better Environment, and the Center for Community Action and Environmental Justice. Regenerate California’s mission is to transition California away from gas-fired power plants and toward a just, clean energy economy powered by 100% renewable energy resources.



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## Acknowledgements

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Research, data modeling, and analysis was conducted by Dr. Ranajit Sahu. This report was developed and designed in collaboration with Sunstone Strategies.

# Executive Summary

## The Notorious Nine: Gas Plant Pollution in Environmental Justice Communities

Regenerate California, a coalition led by the Sierra Club and the California Environmental Justice Alliance, commissioned a study on the emission of nitrogen oxides, or NOx, from gas-fired power plants as part of their efforts to transition California away from fossil fuels and toward 100% renewable energy. NOx emissions are proven to contribute to smog and other severe public health harms, including asthma, respiratory illness, and increased rates of hospitalization. **Nine gas plants were identified as at risk of violating national air quality standards.**

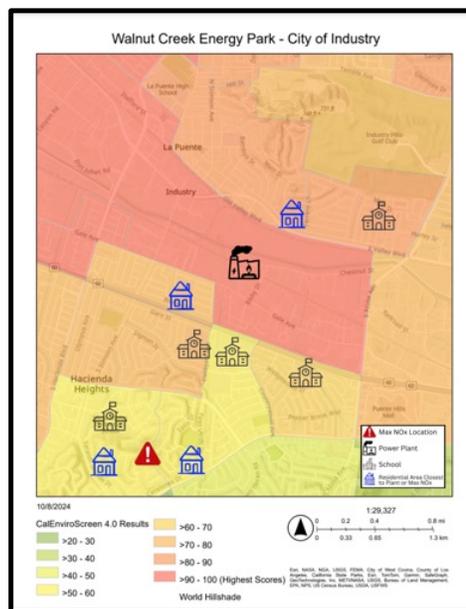
### California Context:

State energy goals include reaching 100% clean energy by 2045, and reduction of greenhouse gas emissions to 40% of 1990 levels by 2030. California agencies – California Energy Commission (CEC), California Public Utilities Commission (CPUC), and California Air Resources Board (CARB) – have already begun undertaking the transition from fossil fuels to clean, renewable energy. However, California’s decision to invest billions of dollars in fossil fuel infrastructure through the Strategic Reliability Reserve, including gas-fired power plants, contradicts state goals.

### Walnut Creek Energy Park:

This report affirms that prolonged exposure to emissions from gas-fired power plants exacerbates climate and public health harms in environmental justice communities. This is

especially true at Walnut Creek Energy Park, one of the worst offenders of California gas plants, which has repeatedly shown levels of NOx that are close to or above national air quality standards. The census tract for the area shows a population that is 80% Hispanic/Latinx and faces some of the most severe levels of pollution in the state. The residential neighborhood that suffers the most NOx emissions from the plant is less than 1.5 miles away. A nearby railroad, multiple warehouses, and a major freeway worsen the climate and public health impacts from the power plant.



## Key Findings:

- Public access to information and emissions data from California gas plants is limited due to gaps in reporting and regulation.
- Gas plant emissions are at their highest during plant start-up and shutdown, when pollution controls are typically ineffective or not operational.
- NOx is not the only harmful emission coming from gas-fired power plants. Combustion in gas plants leads to formation of other pollutants, including ammonia, PM 2.5, and formaldehyde which are among the most concerning.

## Key Recommendations:

- State energy agencies and utilities must reduce California's reliance on dirty gas plants with priority for environmental justice communities.
- Regulators must support improvements in data reporting. All reporting information must be made available to the public.
- Gas plant owners and operators must be required to improve NOx emissions monitoring.
- Air quality management districts should perform further detailed analysis and investigate potential air permit violations.
- Air quality management districts should broaden impact analysis by looking at other gas plant pollutants.

## California's Next Move:

As frontline communities continue to experience public health harms, including increased rates of respiratory illness, pregnancy complications, and in severe cases cancer, it is

the responsibility of state and local regulators to make decisions that best protect Californians. California's move away from dirty fossil fuels toward an equitable, clean energy future is a necessity that must center the voices and lived experiences of environmental justice communities.

## Introduction

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Historically, California has struggled with air quality violations, consistently failing to meet the U.S. Environmental Protection Agency's (EPA) Clean Air Act standards, where multiple regions including the South Coast air basin are in non-attainment status.<sup>1</sup> Polluting facilities and inadequate health and environmental laws cause a long legacy of poor air quality that disproportionately burdens low-income communities of color who live closest to fossil fuel infrastructure such as gas-fired power plants. These communities are commonly referred to as environmental justice communities – neighborhoods most burdened and harmed by many cumulative sources of pollution and injustice. On a state policy level, they are referred to as Disadvantaged Communities (DACs) which are the most burdened census tracts identified by CalEnviroScreen<sup>2</sup> using over 20 indicators of environmental, health, and socio-economic burdens. These communities face the compounded effects of harmful air pollutants like nitrogen oxides (NOx) which are linked to respiratory and cardiovascular diseases, among other health issues. Community-based organizations are working to hold corporations and California decision-makers accountable to meet greenhouse gas reduction, climate, and 100% renewable energy targets. To meet these goals, California must retire its gas plants.



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In 2022, Governor Gavin Newsom authorized Assembly Bill 205, which allocated a controversial \$2.2 billion “Strategic Reliability Reserve” to bolster fossil-fueled resources, including gas-fired power plants and diesel backup generators, under the premise of ensuring adequate power supplies<sup>3</sup>. This legislation not only paved the way for the proposal of new gas plants in Lodi, Modesto, and Turlock, — which are exempt from normal regulatory review processes — but also disrupted previously established plans to shut down gas plants in Oxnard, Long Beach, and Huntington Beach. These delays occurred despite mounting concerns from fenceline communities and environmental justice advocates regarding the public health and environmental impacts of these facilities<sup>4</sup>.

Furthermore, the state is undertaking a multi-agency effort to transition the electric sector away from fossil fuels. Senate Bill 100<sup>5</sup> (De León) requires agencies to develop renewable energy and zero-carbon resources to supply 100% of retail sales to end-use customers by 2045. This mandate also requires the California Energy Commission (CEC), California Public Utilities Commission (CPUC), and California Air Resources Board (CARB) to release a Joint Agency Report every four years outlining how they can achieve 100% carbon-

free energy by 2045<sup>6</sup>.

Given this political and environmental backdrop, an urgent need emerged to assess to what extent emissions — specifically regarding NO<sub>x</sub> emissions — from existing gas-fired power plants contribute to air quality violations. NO<sub>x</sub> pollution remains a key contributor to ozone, a greenhouse gas that is a precursor to smog and health risks, and particulate matter pollution, especially in low-income communities of color living near these facilities. Exposure to NO<sub>x</sub> emissions is correlated with more hospital admissions and increased risk of respiratory complications and related illness, such as asthma<sup>7</sup>.

This analysis was designed to evaluate compliance with the 1-hour NO<sub>x</sub> National Ambient Air Quality Standard (NAAQS), which is set at 188 µg/m<sup>3</sup>. The goal was to identify which plants posed a risk of exceeding these emissions thresholds, especially as California continues to invest in and rely on fossil fuel infrastructure, despite broader efforts to transition to clean energy sources.

The following sections outline the methodology used to conduct this analysis, summarize key findings, examine the nine power plants that are at risk for exceeding the air pollution standards, provide recommendations for

further action to address emissions and protect community health.

## Methodology

Regenerate California identified 31 gas-fired power plants across Southern and Central California counties located in air basins that have not attained EPA national ambient air quality standards and are in or near multiple DACs. These plants were then selected for preliminary analysis. This analysis was designed to evaluate compliance with national air quality standards.

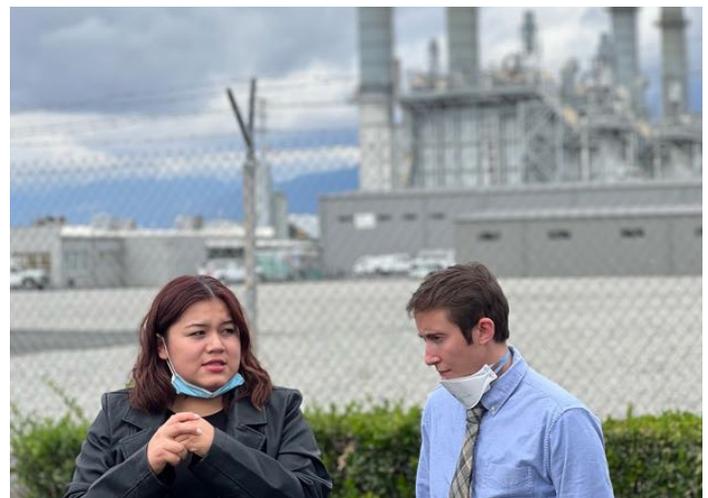
The analysis compared NOx emission values from 2020–2023 against the NAAQS limit. The findings highlighted which plants may be at risk of exceeding the standard. Further detailed analysis could delve into the statistical comparisons, which would provide more depth, however this screening primarily looks at raw numbers.

The screening data was obtained from the EPA’s Clean Air Markets Program Data (CAMPD) database, with exception to three smaller plants (Drews, Century, and Springs) whose data was not publicly available because they are not required to report to the EPA or other authorities. In these cases, NOx input data were substituted from the most representative similar plants in the analysis. Engineering judgment – knowing their locations and individual turbine sizes as well as the make and model of the turbines – was used to estimate emissions for these smaller plants based on similarly sized and operating plants. For all other plants, stack height, diameter, and exhaust velocities were collected from permit documents, stack tests, and other public sources. This preliminary data was used for running initial models and selecting a subset of

18 plants for more refined analysis.

NOx concentrations were modeled using regional meteorological data. Due to on-site data not being publicly available for all plants, representative meteorological data from nearby locations was used for the analysis. Maps overlaid with CalEnviroScreen data were developed that illustrate the location of the gas power plants, nearby schools and residential areas, and the max NOx location which is where concentrations of NOx emissions from the gas plants are the highest based on a combination of wind and terrain patterns.

Table 1 provides a list of all selected plants with their respective county and city locations. The Redondo Beach plant is excluded from this list, as it ceased operations permanently on January 1, 2024, bringing the total number of plants examined to 30. Additionally, the impact analysis for AES Huntington Beach and Alamitos focused solely on the gas-fired units, excluding the residual oil-fired units. However, the conclusions—specifically, that these plants do not appear to cause a 1-hour NOx NAAQS violation—would remain unchanged even if the emissions from the residual oil-fired units were included. Of the 30 gas plants examined, nine were identified as at risk of exceeding the NAAQS emissions standard.



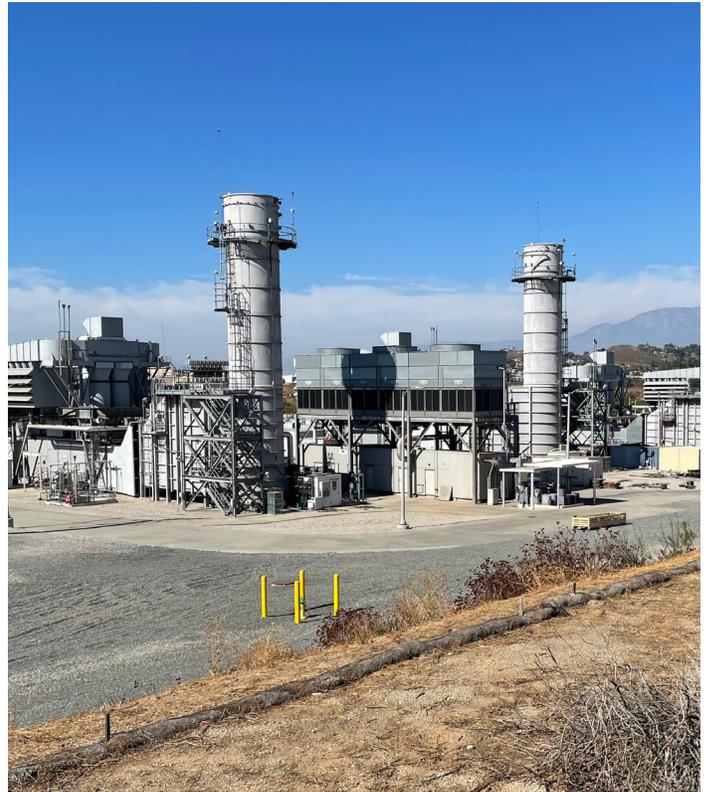
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Power Plant	County	City
Magnolia Power Project	Los Angeles	Burbank
Malburg Generating Station	Los Angeles	Vernon
AES Alamitos (Combustion Turbines)	Los Angeles	Long Beach
Walnut Creek Energy Park Center	Los Angeles	City of Industry Norwalk
El Segundo	Los Angeles	El Segundo
Canyon Power Plant	Orange	Anaheim
AES Huntington Beach (Combustion Turbines)	Orange	Huntington Beach
Stanton	Orange	Stanton
Springs Substation	Riverside	Riverside
Riverside Energy Resource Center	Riverside	Riverside
Sentinel Energy Center	Riverside	Desert Hot Springs
Mountainview Power	San Bernardino	San Bernardino
Century Generating Facility	San Bernardino	Colton
Drews Generating Facility	San Bernardino	San Bernardino
Agua Mansa Combustion Turbines	San Bernardino	Colton
Grapeland Peaker	San Bernardino	Rancho Cucamonga
High Desert Power Project	San Bernardino	Victorville
Mira Loma	San Bernardino	Ontario
La Paloma Generating	Kern	McKittrick
Pastoria Energy Center	Kern	Lebec
NRG Sunrise Power Project <sup>8</sup>	Kern	Fellows
Tracy Combined Cycle (Middle River Power)	San Joaquin	Tracy
Lodi	San Joaquin	Lodi
Ormond Beach Generating Station	Ventura	Oxnard
Malaga	Fresno	Fresno
Midway Peaking	Fresno	Firebaugh
Panoche Energy Center	Fresno	Firebaugh
Almond	Stanislaus	Ceres
Walnut Energy Center	Stanislaus	Turlock

Table 1: The 30 gas plants initially examined for NOx emissions

## Key Findings

The majority of California’s gas plants are located in or near Disadvantaged Communities. Emissions from these plants, including NOx emissions, directly impact levels of air pollution in frontline communities, exposing them to severe health hazards. Key findings suggest that one plant, the Walnut Creek Energy Park in the City of Industry in Los Angeles County, emits enough NOx pollution to potentially violate the 1-hour NOx NAAQS as a single source. Table 2 shows 8 other plants that also appear to be at risk of potentially violating the 1-hour NOx NAAQS. It is recommended that additional detailed modeling for these 8 plants as well as the Walnut Creek Energy Park plant be conducted, per recommendations below.



Power Plant	City
<b>Los Angeles County</b>	
Walnut Creek Energy Park	City of Industry
<b>Riverside County</b>	
Springs Substation Generation Project	Riverside
Riverside Energy Resources Center	Riverside
Sentinel Energy Center	Desert Hot Springs
<b>San Bernardino County</b>	
Agua Mansa Combustion Turbines	Colton
<b>Kern County</b>	
La Paloma Generating	McKittrick
Pastoria Energy Center	Lebec
NRG Sunrise Power Project <sup>9</sup>	Fellows
<b>San Joaquin County</b>	
Tracy Combined Cycle (Middle River Power)	Tracy

Table 2: Nine gas plants at risk of violating the 1-hour NOx NAAQS standard, as a single source

There are significant gaps in public information about NOx emissions from multiple gas plants. Not all plants are required to report emissions, especially smaller facilities, leaving nearby residents unaware of the levels of pollution they face. Frontline communities most vulnerable to the impacts of gas plant emissions have a right to know about the pollution affecting their health. Greater transparency and stricter regulations are needed to ensure that all power plants, regardless of size, report their emissions.

While most of the selected power plants report NOx emissions on an hourly basis to the EPA's CAMPD database<sup>10</sup>, there were exceptions. Three smaller plants, each under 50 MW in capacity, were not required to report their emissions due to their size. This regulatory gap, where smaller power plants are exempt from mandatory reporting, underscores a significant shortfall in current regulations. Addressing this gap would provide a more comprehensive understanding of emissions across all power plants, regardless of size. This could be remedied by amending federal or local regulations.

None of the analyzed plants publicly reported hourly, on-site collected meteorological data. This data is a crucial input for NOx modeling. As a result, meteorological data from nearby locations were used instead. This gap in gas plant reporting data creates opportunity for inaccuracy in our analysis as the substituted data is not necessarily representative of the exact plants, suggesting the need for improved data collection and public reporting practices.

Other gaps in reporting information include plant geometry, exhaust flow rates, and exhaust velocities. Despite being essential inputs for modeling, these parameters are not required to be publicly reported in a systematic way. Gathering this information involved

a time-consuming process of reviewing permits, permit applications, stack test reports, and visual sources like Google Maps and Google Earth. Public access to this critical information is increasingly limited. To enhance transparency and accuracy in air quality modeling, it is recommended that source characteristics reporting be mandated for all gas power plants.

## **Startup and Shutdown Emissions**

***The most concerning gas plant emissions often occur during startup and shutdown periods when pollution controls are either ineffective or not operational. These spikes in pollution are not well-regulated, leaving dangerous gaps in air quality protections.***

In particular, while all of the plants in the study were equipped with Selective Catalytic Reduction (SCR) units, considered the best available type of control for NOx, the actual NOx emitted depends on how such SCR units are actually designed and operated on a day-to-day basis. NOx emissions for specific hours can be substantially higher during non-normal operating time periods, such as during startup-up or similar time periods when the SCR NOx control is not working as compared to time periods when such controls are operating. As an example, Riverside Unit 1 has a median NOx emission rate of just 2.72 pounds per hour during 2022-2023 while the maximum hourly NOx emissions were almost 370 pounds per hour - a factor of over 136 times higher. As another example, the Sunrise Power Company Unit 1's median NOx rate from 2022-2023 was 9.14 pounds per hour while its maximum hourly NOx emissions in the same time period was almost 229 pounds per hour - a factor of 25 times greater.

Unfortunately, there are no regulatory reporting requirements relating to SCR performance. Nonetheless, since the SCR relies on a catalyst to effect the NO<sub>x</sub> reduction, and the catalyst is not “active” below a certain temperature or load, NO<sub>x</sub> emissions—even for SCR-equipped units—are high under startup and shutdown conditions. How often these conditions occur depends on whether a unit is dispatched to meet peak loads (“peakers”), or provide baseload electricity or something in-between. For example, Sentinel Energy Center is equipped with NO<sub>x</sub> controls, but emissions remain especially high during shutdowns when pollution controls are less effective.

## More than NO<sub>x</sub>

While this study primarily focused on NO<sub>x</sub> emissions from the selected group of gas plants, it is important to acknowledge that the combustion of methane gas in these combustion-turbine plants also leads to the formation and direct emissions of various other pollutants. These pollutants pose significant environmental and public health risks. Pollutants include:

**Carbon Monoxide (CO):** A colorless, odorless gas that can impair cognitive functions and lead to serious health issues, particularly in high concentrations.

**Volatile Organic Compounds (VOCs):** A diverse group of organic chemicals that can evaporate into the air, contributing to smog formation and posing health risks such as respiratory problems and long-term effects including cancer.

**Particulate Matter (PM):** Emissions include various sizes of particulate matter, notably PM<sub>10</sub> and PM<sub>2.5</sub>, which can penetrate deep into the lungs and have been associated with cardiovascular and respiratory diseases.

**Sulfur Dioxide (SO<sub>2</sub>) and Sulfur Trioxide (SO<sub>3</sub>):** These sulfur oxides contribute to acid rain and can exacerbate respiratory conditions, affecting both human health and ecosystems.

**Sulfuric Acid Mist:** This pollutant results from the conversion of sulfur oxides in the atmosphere and can cause severe health effects, particularly in individuals with preexisting respiratory conditions.

**Ammonia (NH<sub>3</sub>):** Often utilized in selective catalytic reduction (SCR) systems to control NO<sub>x</sub> emissions, ammonia itself can lead to secondary pollution issues and contribute to the formation of fine particulate matter.

**Hazardous Air Pollutant Metals:** These metals are often found within PM<sub>10</sub> and PM<sub>2.5</sub> emissions and include toxic substances that can lead to serious health effects upon exposure.

**Hazardous Air Pollutant VOCs:** Specific VOCs, such as formaldehyde and benzene, are of particular concern due to their carcinogenic properties and adverse health effects.

**Uncombusted Methane:** As a significant component of methane gas, uncombusted methane is a potent greenhouse gas that contributes to climate change.

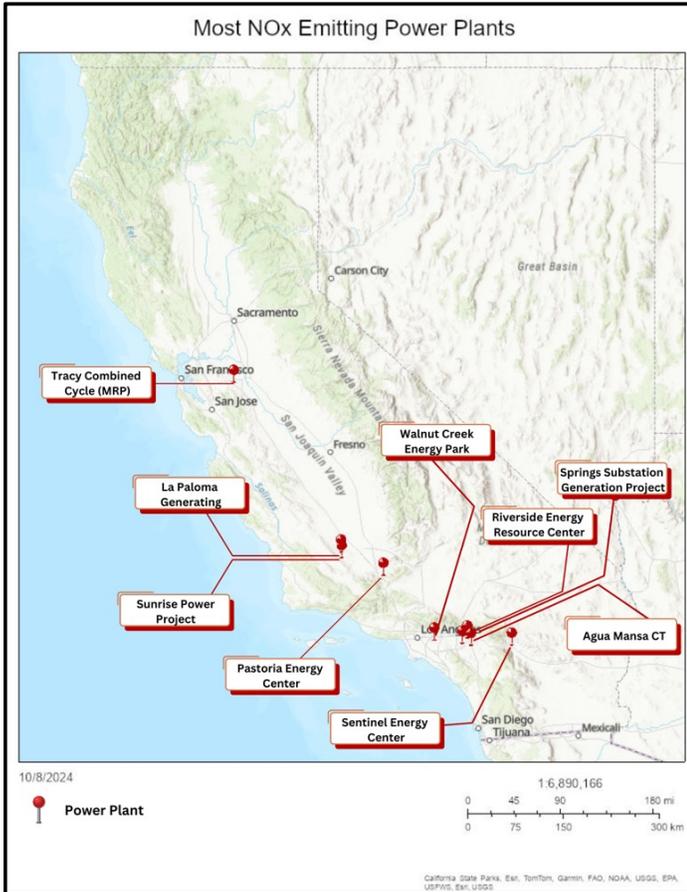
**Carbon Dioxide (CO<sub>2</sub>):** The primary product of methane gas combustion, CO<sub>2</sub> is a greenhouse gas that contributes to climate change.

**Nitrous Oxide (N<sub>2</sub>O):** Another greenhouse gas emitted during combustion, which has a much greater heat-trapping ability than CO<sub>2</sub>.

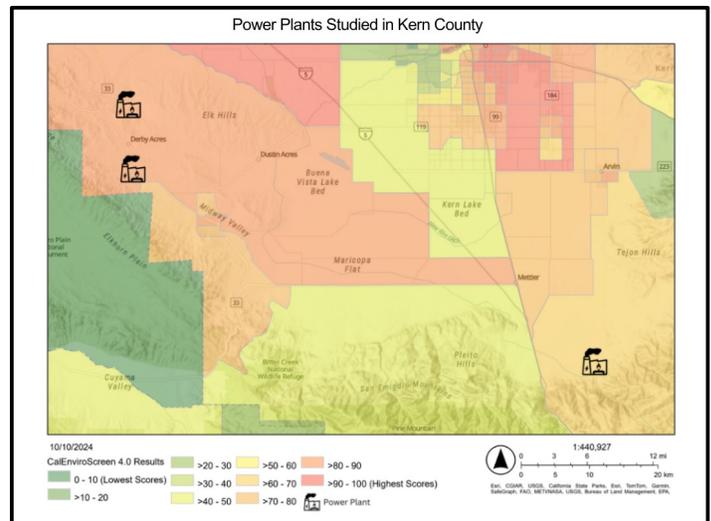
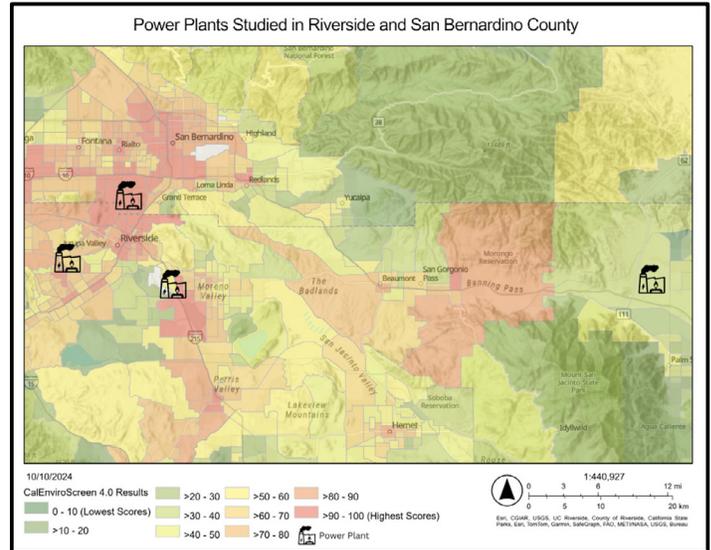
Among these emissions, ammonia, PM<sub>2.5</sub>, and hazardous air pollutants such as formaldehyde are especially concerning. Their direct adverse effects on surrounding communities can lead to detrimental health outcomes, including respiratory issues, cardiovascular diseases,

and increased cancer risk. Therefore, it is crucial for regulatory frameworks to consider not only NOx emissions, but also the full spectrum of pollutants associated with methane gas combustion to safeguard public health and the environment effectively.

## Top Polluting Gas Plants in California (with Maps)



*The 9 most NOx emitting gas plants out of the 30 plants modeled in this report.*



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## Walnut Creek Energy Park

**Location:** City of Industry, Los Angeles County

**Owner:** Clearway Energy

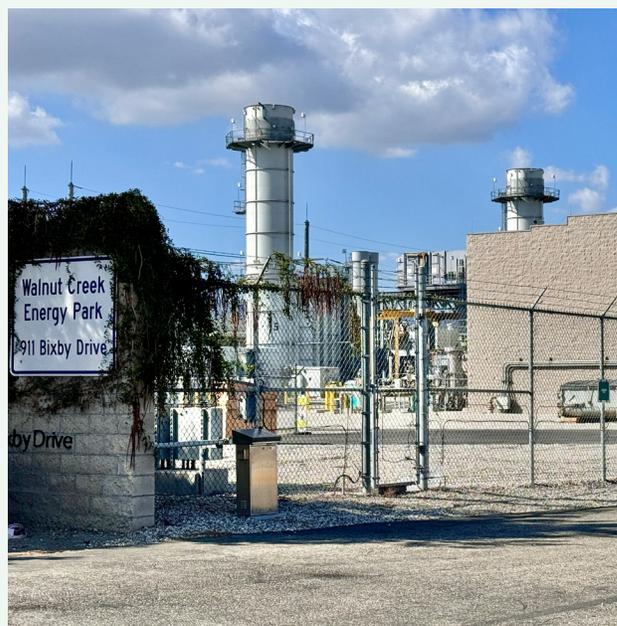
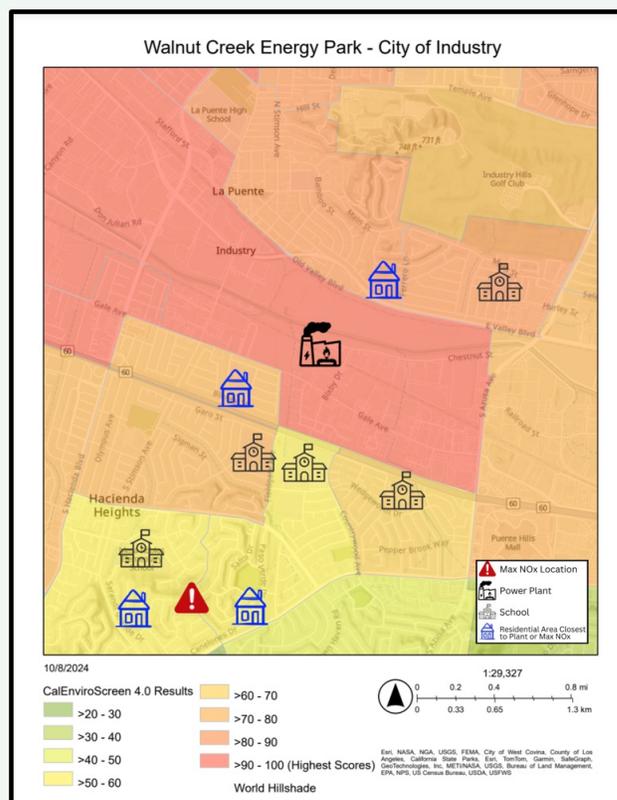
**Utility Service Territory:** Southern California Edison

**Power Plant Pollution Burden Percentile<sup>1</sup> :** 100

**NOx levels:** Walnut Creek Energy Park has repeatedly shown levels of NOx that are close to or above national air quality standards. It's a major concern for local residents. Further analysis is needed to determine whether it is consistently exceeding the 1-hour NOx limit set by the EPA.

**Census tract and socio-economic context:** Walnut Creek Energy Park is located in the City of Industry. The Census Tract in which the plant is located is predominantly Hispanic/Latinx (80.8%). The CalEnviroScreen Pollution Burden of this census tract is 100, meaning that compared to all other census tracts in the state, this is one of the most severely polluted communities. This community experiences high levels of pollution from cleanup sites, groundwater threats, hazardous waste, and solid waste. Socioeconomic factors impacting this community include poverty, unemployment, linguistic isolation, and housing burden. Additionally, this community experiences health impacts including asthma and cardiovascular disease. This power plant is located within two miles of Hurley Elementary School and less than half a mile from the nearest residential area.

The community that experiences the most NOx emissions from this power plant is about 1.2 miles southwest of the plant. This is a residential community with two elementary schools: Mesa Robles



Elementary School and Grazide Elementary School. This community has a population of 4,214 people and is predominantly Asian American (52.2%) and Hispanic/Latinx (31.9%). This community is impacted by pollution including ozone, particulate matter 2.5, and toxic releases. This community faces health impacts such as asthma, low birth weight, and cardiovascular disease.

**Additional Contributing environmental factors:** The Walnut Creek Energy Park is located next to a railroad, numerous warehouses, and the 60 freeway. These cumulative impacts likely contribute to the NOx emissions in the area.

## 2 Springs Substation

**Location:** Riverside, Riverside County

**Owner:** City of Riverside

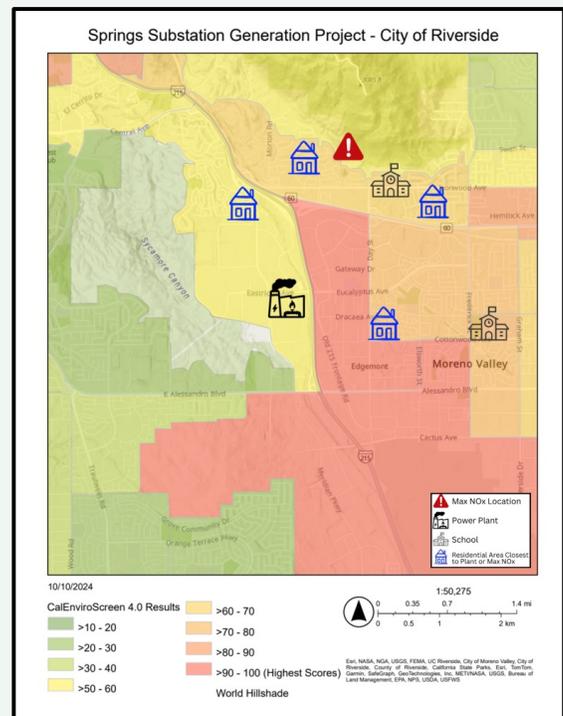
**Utility Service Territory:** Riverside Public Utilities

**Power Plant Pollution Burden Percentile :** 58

**NOx levels:** Springs Substation Generation Park is among the top NOx emitters in the region. It is especially problematic during startup and shutdown periods when emissions spike, creating health risks for nearby communities.

**Census tract and socio-economic context:** Springs Substation Generation Park is located in the City of Riverside. The Census Tract in which the plant is located is predominantly White (39%) and Hispanic/Latinx (30.2%). Ozone is the biggest pollutant of concern, being in the 98th percentile. This community experiences high levels of diesel particulate matter and particulate matter 2.5 pollution. Health impacts in the community include asthma and cardiovascular disease. This plant is located less than one mile from Edgemont Elementary School and is next to a residential community with a CalEnviroScreen score in the 99th percentile, meaning only 1% of census tracts in the state are more environmentally and socially burdened.

The community that experiences the most NOx emissions from this power plant is less than 2 miles northeast of the power plant near a residential community in Moreno Valley. This area is also less than one mile from Box Spring Elementary School. This community is predominantly Hispanic/Latinx (45.8%) and White (30.6%) and experiences some of the worst ozone pollution in the state and experiences health impacts including asthma, low birth weight, and cardiovascular disease.



### 3 Riverside Energy Resource Center

**Location:** Riverside, Riverside County

**Owner:** City of Riverside

**Utility Service Territory:** Riverside Public Utilities

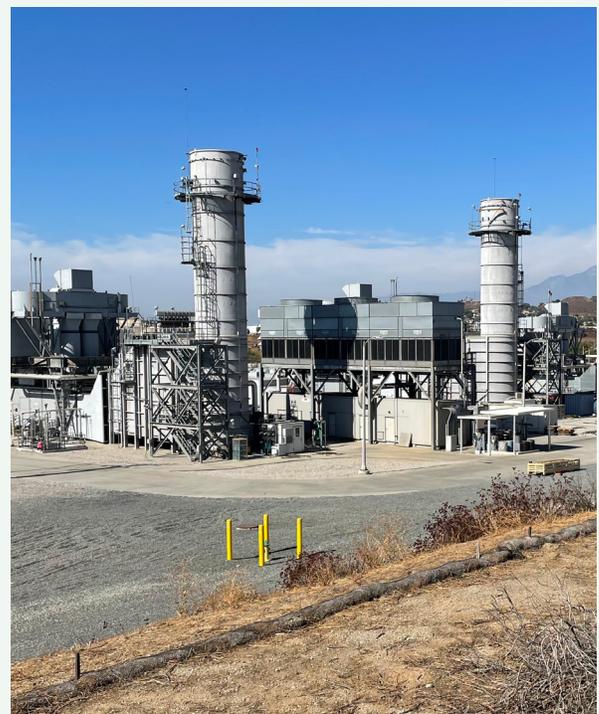
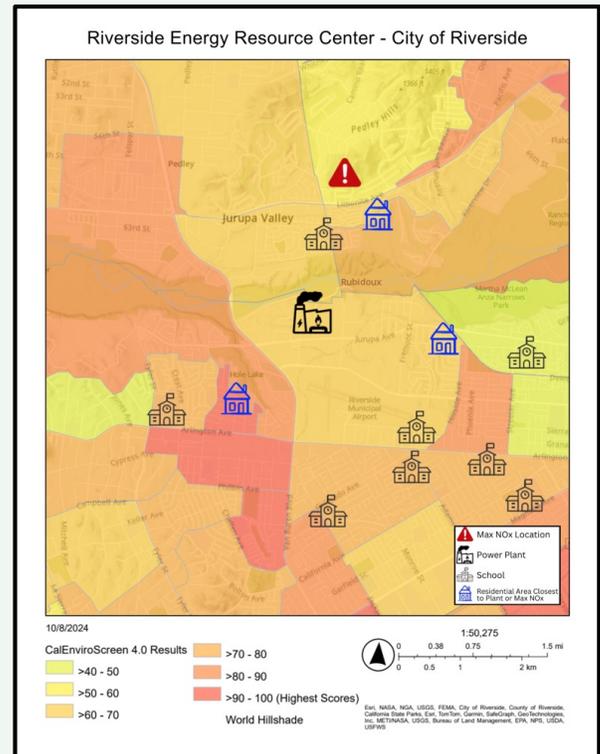
**Power Plant Pollution Burden Percentile : 90**

**NOx levels:** Riverside Energy Resource Center poses a risk to public health due to significant NOx emissions, particularly when it operates at low loads.

**Census tract and socio-economic context:** Riverside Energy Resource Center is located in the City of Riverside, in a predominantly Hispanic/Latinx (67.1%) community. This community experiences some of the highest pollution burdens in the state, including exposures to ozone, particulate matter 2.5, and hazardous waste. Health impacts in the community include asthma and cardiovascular disease.

The community that experiences the most NOx emissions from this power plant is less than 2 miles north of the power plant near a residential community in Jurupa Valley and is near Indian Hills Elementary School. This community also experiences high levels of ozone and particulate matter pollution.

**Additional Contributing Environmental Factors:** Riverside Energy Center is located approximately 10 miles from Springs Substation. Communities between these two plants likely experience cumulative impacts from both plants as well as the nearby Riverside Airport, the 215 and 60 freeways, and trucks going to and from nearby warehouses.



## 4 Sentinel Energy Center

**Location:** Desert Hot Springs, Riverside County

**Owner:** Multiple corporations including Diamond Generating Corp

**Utility Service Territory:** Southern California Edison

**Power Plant Pollution Burden Percentile :** 11

**NOx levels:** Although Sentinel Energy Center is equipped with NOx controls, emissions remain high, especially during shutdowns when pollution controls are less effective.

**Census tract and socio-economic context:** The Sentinel Energy Center is located in the City of Desert Hot Springs. The community is predominantly Hispanic/Latinx (45.9%) and White (45.9%). This community is disproportionately impacted by ozone pollution and experiences health impacts including asthma and cardiovascular disease. The community is burdened by high rates of poverty, barriers to education, housing burden, and unemployment. This power plant is located about 3 miles from Desert Hot Springs High School, Edward L Wenzlaff Elementary School, and a residential community.

The community that experiences the most NOx emissions from this power plant is less than 2 miles northwest of the power plant. This area experiences some of the highest ozone pollution in the state and is burdened by high rates of low birth weight and cardiovascular disease. This community also faces socioeconomic barriers including poverty, unemployment, housing burden, and lack of education.

**Additional Contributing Environmental Factors:** Three major freeways including the 111, 10, and 62 also run through this area.



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## Agua Mansa CT

**Location:** Colton, San Bernardino County

**Owner:** City of Colton

**Utility Service Territory:** City of Colton

**Power Plant Pollution Burden Percentile :** 99

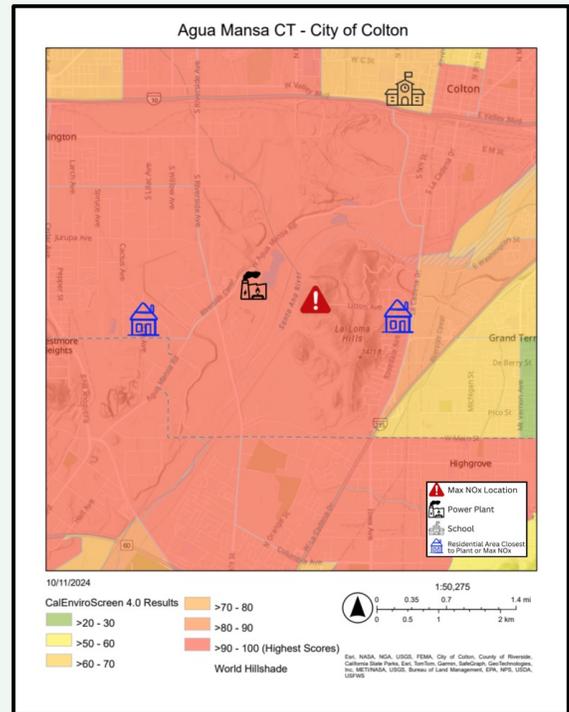
**NOx levels:** In an area already suffering from poor air quality, this plant adds to the burden, with high NOx emissions that threaten to push local air pollution levels past safe limits.

### **Census tract and socio-economic context:**

This power plant is located in the City of Colton, in one of the most pollution burdened communities in the state. This community is predominantly Hispanic/Latinx (75%). This community experiences some of the highest rates of pollution from ozone, particulate matter 2.5, hazardous waste, solids waste, cleanup sites, and groundwater threats. The residents of this community experience high rates of asthma, cardiovascular diseases, and low birth weight. This community also experiences socioeconomic impacts including linguistic isolation, lack of education, and poverty. Less than 1.5 miles to the northwest of this power plant is Crestmore Elementary School and a residential community.

The area that experiences the most NOx emissions from this power plant is less than half a mile to the east of the power plant, meaning the NOx emissions from this plant most impact the community it is located in near La Loma Hills.

**Additional Contributing Environmental Factors:** This community is surrounded by freeways (215, 60, and 10 freeways) and a slough of warehouses.



## 6 La Paloma Generating Station

**Location:** McKittrick, Kern County

**Owner:** Multiple corporations

**Utility Service Territory:** Pacific Gas and Electric

**Power Plant Pollution Burden Percentile :** 96

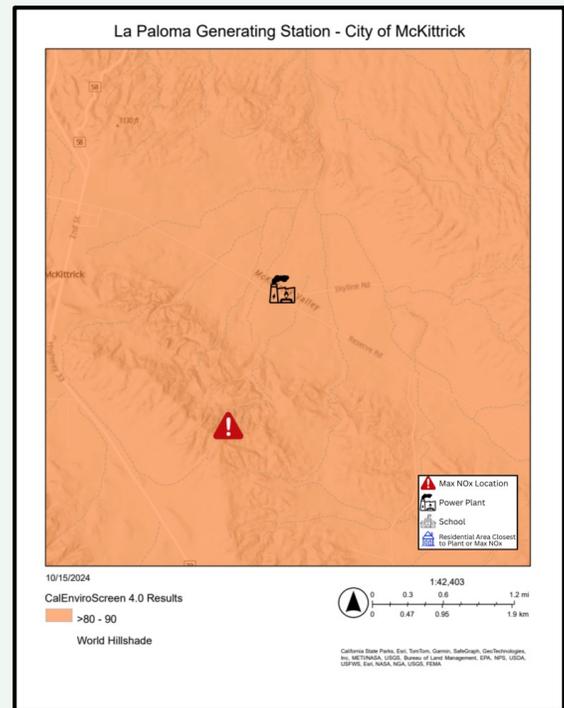
**NOx levels:** This large plant in the Central Valley contributes significantly to NOx emissions in the region, impacting nearby rural communities. The community is 52% White and 40% Hispanic/Latinx.

### **Census tract and socio-economic context:**

It is in the 81st percentile of CalEnviroScreen and 96th percentile of pollution burden. In particular, this region experiences extreme concentrations of ozone, particulate matter 2.5, toxic releases, and pesticides. The residents of this community experience asthma, high cardiovascular disease, and low birth weight. McKittrick residents also experience socioeconomic challenges including a high poverty level (70th percentile) and unemployment rate (88th percentile).

### **Additional Contributing Environmental Factors:**

The community has highways 58 and 33 cutting through the neighborhood. Within 2 miles from the Generating Station is McKittrick Elementary School and the McKittrick Valley residential neighborhood.



## 7 Pastoria Energy Center

**Location:** Lebec, Kern County

**Owner:** Multiple corporations

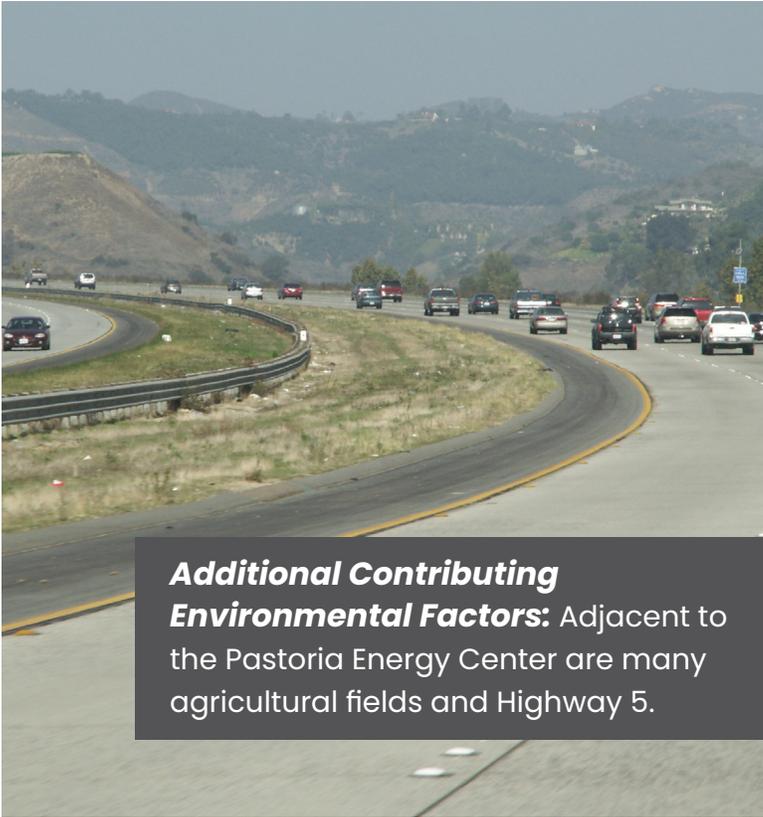
**Utility Service Territory:** Southern California Edison

**Power Plant Pollution Burden Percentile :** 64

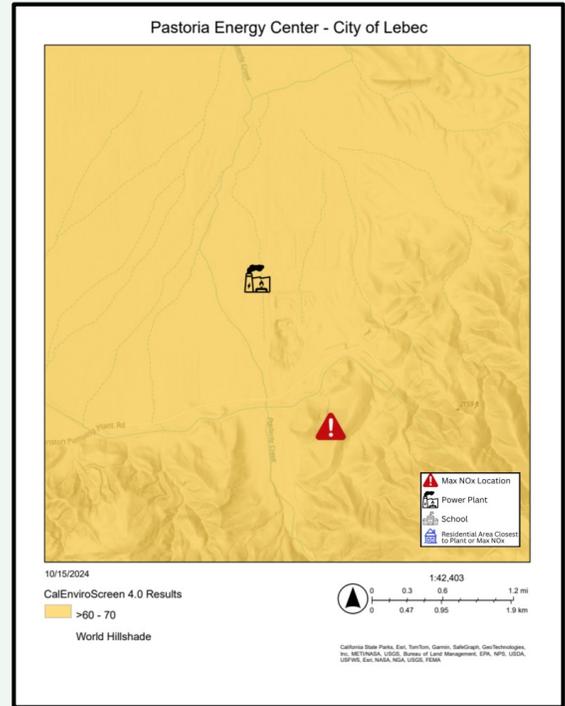
**NOx levels:** Like La Paloma, this plant operates near agricultural communities and emits large amounts of NOx, contributing to smog and respiratory issues.

### **Census tract and socio-economic context:**

Lebec is 76% White and 17% Hispanic/Latinx. It is in the 62nd percentile for CalEnviroScreen. Its residents are exposed to high levels of ozone, pesticides, and polluted drinking water. Lebec also has sensitive populations with high levels of asthma, low birth weight, and cardiovascular disease. This community also faces high levels of poverty (63rd percentile) and low levels of education (39th percentile).



**Additional Contributing Environmental Factors:** Adjacent to the Pastoria Energy Center are many agricultural fields and Highway 5.

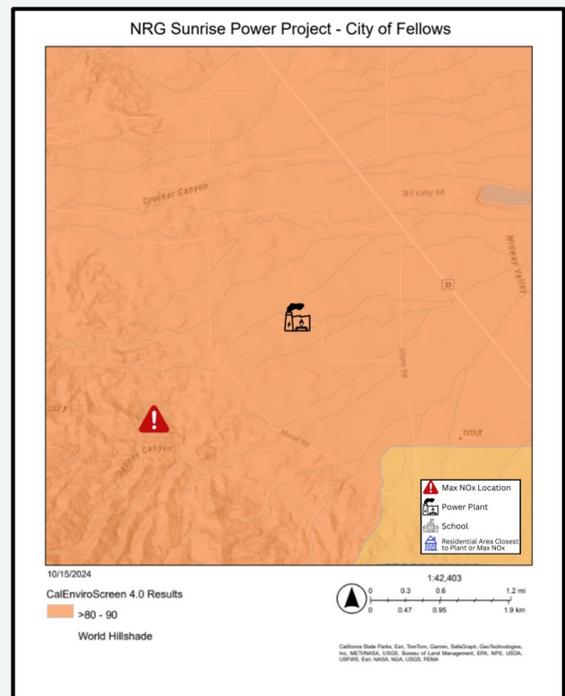


## 8 Sunrise Power Project

**Location:** Fellows, Kern County  
**Owner:** ArCLight Capital Partners, LLC  
**Utility Service Territory:** Pacific Gas and Electric  
**Power Plant Pollution Burden Percentile :** 96

**NOx levels:** High NOx emissions during startup and shutdown phases make this plant a key target for further regulatory scrutiny and possible shutdown.

**Census tract and socio-economic context:** The Sunrise Power Project is located in the census-designated place of Fellows in Kern County. Fellows is a rural community and is surrounded on all sides by the Midway-Sunset Oil Field, the third-largest oil drilling field in the United States. The census tract in which Fellows is located is predominantly White (50%) and Hispanic/Latinx (45%). While Fellows itself is not a community that experiences high levels of poverty, Kern County as a whole and nearby



communities experience high levels of poverty and unemployment and face various environmental impacts such as groundwater threats and exposure to ozone pollution.

## 9 Tracy Combined Cycle Plant

**Location:** Tracy, San Joaquin County

**Owner:** Middle River Power

**Utility Service Territory:** Pacific Gas and Electric

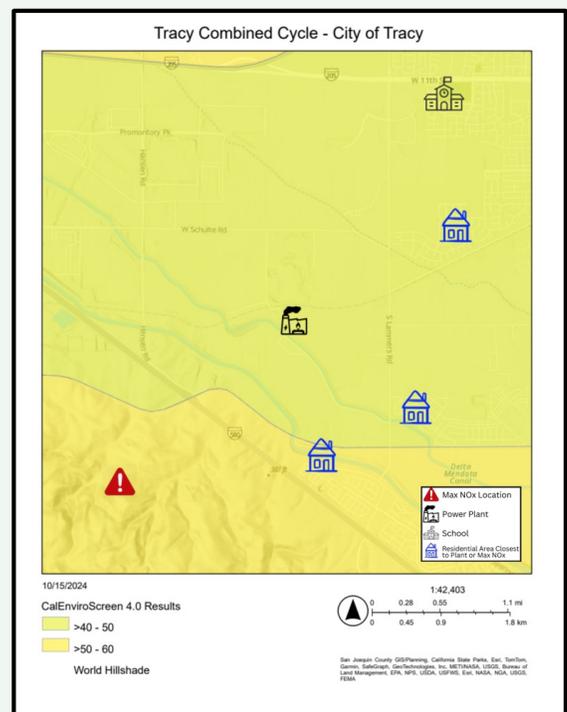
**Power Plant Pollution Burden Percentile :** 53

**NOx levels:** This plant's NOx emissions are a serious concern for public health, particularly given its location in an area already dealing with pollution from agriculture and transportation.

**Census tract and socio-economic context:** The Tracy Combined Cycle Plant is located in the city of Tracy, the second most populated city in San Joaquin County. The census tract in which the Tracy Combined Cycle Plant is located is predominantly Asian American (33%), Hispanic/Latinx (27%), and White (27%). The community is burdened by pesticides that threaten groundwater quality and hazardous waste from nearby industries. The community also experiences high rates of cardiovascular disease.

### **Additional Contributing Environmental**

**Factors:** The community is surrounded by three major freeways including Interstate 205, Interstate 5, and Interstate 580. Residents of Tracy have experienced environmental injustices in the past such as the 2-year burning of an illegal tire dump site which released chemicals into the local air and soil contaminating the region's groundwater in the late 1990s.



## Recommendations

To address these concerns and safeguard the air quality and health of local communities, the following actions are recommended:

### 1. Reduce Reliance on Dirty Gas Plants throughout California with Priority for Environmental Justice Communities:

-  The CPUC should plan for reduced reliance on polluting gas plants.
-  The CPUC should target DACs for clean energy procurement.
-  The CAISO should plan to reduce reliance on gas plants through targeted transmission planning for local capacity areas that deliver clean energy resources to areas currently served by gas plants.
-  The CEC should plan to retire the dirtiest gas plants in DACs by 2030 as part of SB 100 Resource Planning efforts.
-  Utilities should develop clean energy alternatives to reduce their reliance on and procurement from gas plants in DACs.

### 2. Improve Data Reporting:

-  Make information accessible: Air Quality Management Districts (AQMDs) should require operators to provide basic geometry data, such as stack heights and diameters, as well as operational parameters like hourly stack temperatures and flow rates to the EPA's Clean Air Markets database. This information should be made readily and easily available to the public. Public record requests should not be required to access plant permits, data, and violation records.
-   Collect emissions data from all gas plants: The CEC and AQMDs should require reporting of NO<sub>x</sub> and other emissions for smaller plants, and plants with Selective Catalytic Reduction (SCR) systems should report SCR inlet gas temperatures.
-   Expand data reporting: The CEC and AQMDs should require reporting of NO<sub>x</sub> and other emissions during power plant startup and shutdowns when SCR systems are less effective.
-  Inform impacted communities: AQMDs should regularly provide reports to fenceline communities on gas plant emissions, including alerts on spikes in NO<sub>x</sub>, so they are aware of air quality hazards and health risks.

### 3. Increase NO<sub>x</sub> Monitoring:

-  AQMDs should require additional NO<sub>x</sub> ambient monitoring and collection of meteorological data at each plant site in order to better assess potential violations and impacts on air quality.

Legend:  Local  State

#### 4. Conduct Further Detailed Analysis:

-  AQMDs should perform refined, site-specific analyses to determine whether past or future operations may violate their permit emissions limits.
-  For plants near multiple pollution sources, such as the Agua Mansa in San Bernardino County, AQMDs should investigate cumulative impacts from nearby plants and emissions sources with reporting and emissions data made easily available to the public.
-  AQMDs should model NOx emissions at all gas power plants in California in order to fully understand their impacts on nearby communities.
-  AQMDs should identify and conduct in depth analysis on additional sources of NOx beyond gas-fired power plants.

#### 5. Broaden Impact Analysis:

-  AQMDs should conduct future analyses that expand beyond just NOx emissions to include assessments of other pollutants (e.g., ammonia, formaldehyde, and PM2.5). These analyses will provide a fuller picture of the overall environmental and health impacts of gas plants on surrounding communities.

## Conclusion

This report demonstrates the detrimental impacts of NOx emissions from gas-fired power plants on the health and air quality of environmental justice communities. NOx emissions, paired with other poisonous and carcinogenic pollutants released from gas-fired power plants, contribute to increasing numbers of hospital visits for those living in close proximity, in addition to chronic health impacts such as asthma and other respiratory issues. The public health hazards from gas plant emissions are even more threatening for children, pregnant people, and the elderly. We need to retire these polluting power plants for the health of local communities and our global climate.

Environmental justice communities must be prioritized in California's transition away from fossil fuels and should be first in line to benefit from a clean energy future. In the context of this report, this means gas plants located in Disadvantaged Communities should be shut down first. California decision-makers must continue to work in collaboration with frontline communities and environmental justice advocates to realize our commitments to 100% clean energy by 2045, greenhouse gas reduction goals, and Clean Air Act standards.

## Citations

- 1 U.S. EPA, Current Nonattainment Counties for All Criteria Pollutants (Sept. 30, 2024), available at <https://www3.epa.gov/airquality/greenbook/ancl.html>
- 2 Cal. Off. of Env't Health Hazard Assessment, CalEnviroScreen 4.0 (Oct. 13, 2021), available at <https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40>
- 3 [https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\\_id=202120220AB205](https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220AB205)
- 4 Los Angeles Times, California just can't kick its coastal gas plant addiction (June 22, 2023), available at <https://www.latimes.com/environment/newsletter/2023-06-22/california-just-cant-kick-its-coastal-gas-plant-addiction-boiling-point>
- 5 California Legislative Information, SB-100 California Renewables Portfolio Standard Program: emissions of greenhouse gasses. [https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill\\_id=201720180SB100](https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB100)
- 6 California Energy Commission, SB 100 Joint Agency Report. <https://www.energy.ca.gov/sb100>
- 7 <https://www.epa.gov/no2-pollution/basic-information-about-no2>
- 8 The Sunrise Power Project was modeled using two estimated stack heights: 40 meters and 65 meters. Publicly available data on actual stack height was not available
- 9 The Sunrise Power Project was modeled using two estimated stack heights: 40 meters and 65 meters. Publicly available data on actual stack height was not available
- 10 <https://campd.epa.gov/>
- 11 This and following pollution burden percentiles refer to the census tract that the gas power plant is located in and is based on data from CalEnviroScreen



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