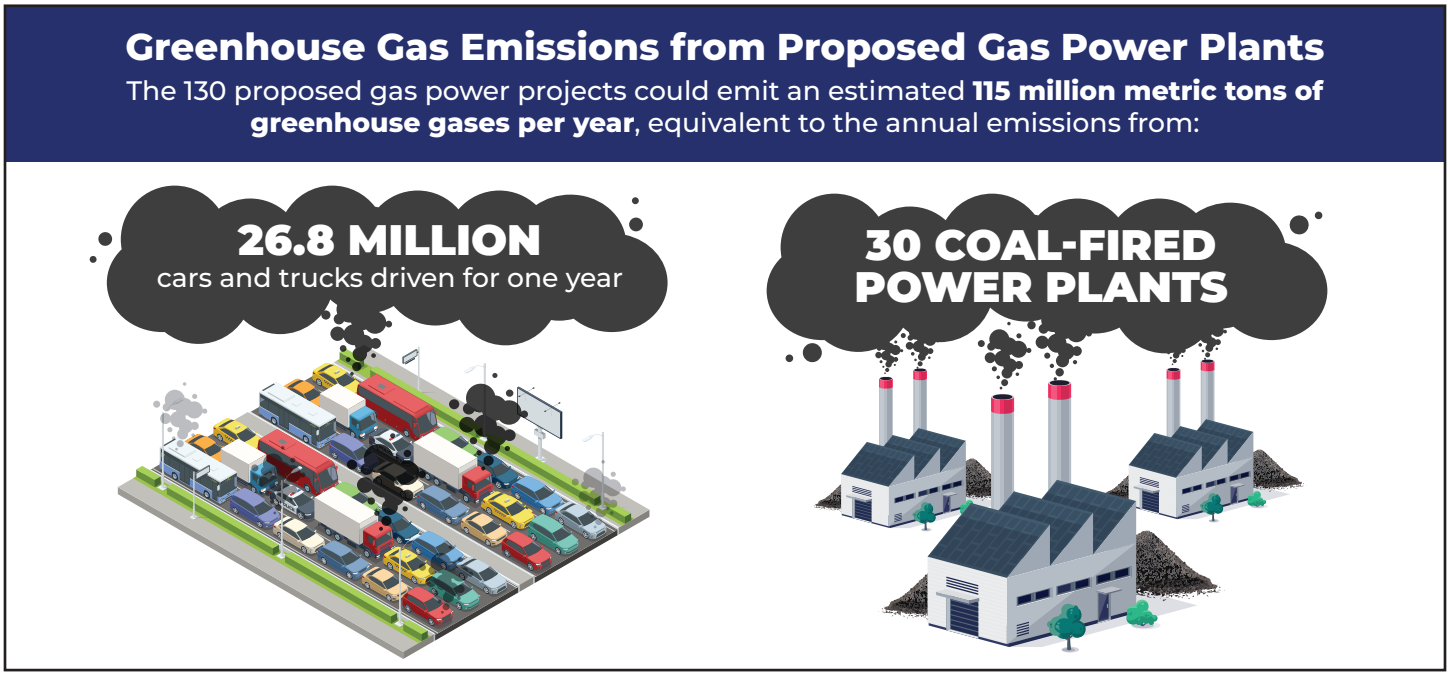
A Pollution Footprint the Size of Texas:

The Lone Star State's Gas Plant Boom

June 11, 2025

Electricity consumption is expected to grow rapidly in Texas, with peak demand nearly doubling by 2034, according to recent estimates by the Electric Reliability Council of Texas (ERCOT), which manages the state's main power grid.[1] The expansion of the data center industry, which consumes vast amounts of electricity, as well as record population growth and the impacts of extreme weather like Winter Storm Uri, have all contributed to Texas' desire to urgently add new generating capacity. A special state fund supported by billions in taxpayer dollars, along with cheap natural gas from hydraulic fracturing, are driving the state's effort to meet growing electricity demand by building and expanding natural gas-fired power plants.

To track the buildout of gas-fired power plants in Texas, the Environmental Integrity Project (EIP) has created an online map and inventory of gas power plants proposed in the Lone Star State.[2] As of April 2025, EIP's inventory contained 130 proposed gas power plant projects that could cumulatively add over 58 gigawatts (GW) of new generating capacity to the Texas grid and emit an estimated 115 million metric tons of greenhouse gases each year.[3, 4] These projects include at least 108 new power plants, 17 expansions, and five projects for which specifics have not yet been announced. In total, the 115 million metric tons of greenhouse gases would be as much climate-warming pollution as from 26.8 million cars and trucks driven for a year, or 30 coal-fired power plants.[5] Of this total increase from Texas, around 110



million metric tons of greenhouse gases would come from the power plants themselves, while 5 million metric tons would come from associated natural gas production, processing, and transportation.[6] In total, these projects could increase Texas' greenhouse gas emissions by 13 percent over 2021 levels.[7]

In addition to planet-warming greenhouse gases, the new generating capacity from natural gas power plants would emit harmful air pollution that could degrade local air quality in communities across Texas. Based on potential emissions information disclosed for 45 of the proposed power plants, these plants could emit thousands of tons of dangerous pollutants, like particulate matter, and smog-forming nitrogen oxides and volatile organic compounds.[8] Of the 54 proposed gas power plants with detailed location information, at least 14 of them would be built in areas that either already violate the Environmental Protection Agency's national ozone standards or are expected to exceed its new limits on fine particulate matter.[9] This threat to local air quality could be compounded further as infrastructure for natural gas production, processing, and transportation is built out to provide the additional natural gas needed for the new gas power plants.

Texas could choose a cleaner path to increase its electricity generation, including by subsidizing more solar and wind power and large-scale battery storage units, instead of using taxpayer dollars to support energy from fossil fuels. The state is also endangering the health of its own residents by failing to require adequate air pollution control systems in the permits issued to at least some gas-fired power plants. Instead of following the requirements of the Clean Air Act and issuing "major" source permits for large sources of air pollution, which require the installation of the best available pollution control equipment, Texas regulators are rapidly authorizing some large gas power plants without public notice through what are called "standard" permits with weaker pollution limits.[10] In at least two instances, the state authorized a gas power plant through a standard permit within 48 hours of a company's application – raising questions about how thoroughly the state is reviewing the potential public health and climate impacts of these power plants.[11]

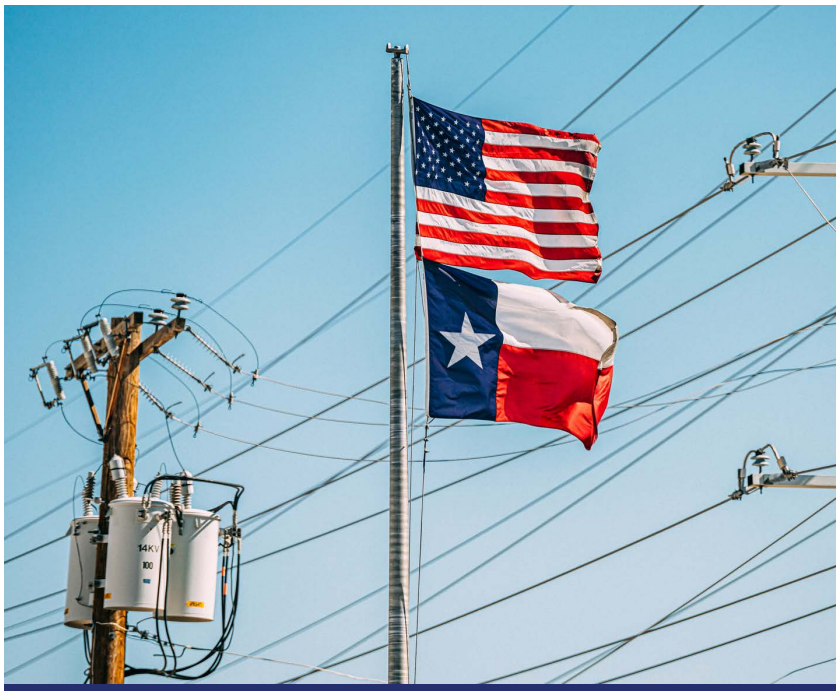
Even in the face of growing electricity demand, Texans deserve to have their health and climate protected through careful planning, clean energy sources, and adherence to the pollution control requirements of the federal Clean Air Act.

Developers are proposing to build 108 new gas-fired power plants in Texas. Shown here is an example of an existing gas plant, the Lake Hubbard Power Plant in Dallas County, Texas.

Background

According to the U.S. Energy Information Administration, Texas is already the largest net electricity generator in the country by far.[12] In 2024, Texas generated over 563 million megawatt hours of electricity, more than twice as much as Florida, the second largest electricity generating state.[13] The state's appetite for power is slated to grow even larger in the coming decades. According to ERCOT data, Texas' peak electricity demand in 2024 was 85,425 megawatts (MW), nearly tying the state's all-time peak demand record that was set in 2023.[14] Projections from ERCOT have peak demand increasing to 152,230 MW by 2034.[15] ERCOT forecasts also show that available power supply might not keep pace with demand. The most recent projections show that by 2027 peak summer electricity demand, 117,359 MW, could exceed expected available supply, 110,296 MW.[16] A myriad of factors are contributing to the growing demand for electricity in Texas, including population growth and increasing industrial demand.

Texas is currently the second most populous state in the U.S. and is experiencing rapid growth.[17] In just one year, between 2023 and 2024, Texas' population grew 1.8 percent, adding nearly 563,000 new residents – the largest numeric population increase in the country.[18] Recent estimates suggest that Texas will continue to experience population growth. According to the Texas Demographic Center, the state is expected to be home to between 40 million and 46 million people by 2060.[19] This would amount to a 29 to 48 percent increase over the 31.3 million people living in Texas as of 2024.[20] Texas' residential per capita electricity consumption rate is already in the top third of all U.S. states, due in part to high air conditioning usage.[21, 22] In 2020, air conditioning accounted for 28 percent of total household electricity consumption in Texas, significantly higher than the national share of 19 percent, a figure that is likely to rise as climate change extends and intensifies the summer heat.[23, 24]



In 2024, Texas generated over 563 million megawatt hours of electricity, more than twice as much as Florida, the second largest electricity generating state.

Texas is also experiencing growth in industrial electricity demand, chiefly due to the growth of data centers - specialized facilities that house and manage an array of computer systems to store, process, and distribute data and enable artificial intelligence. A trifecta of low natural gas costs from the hydraulic fracturing boom, cheap land, and lax government regulations has made Texas a data center destination. In 2023, Texas was estimated to have the second highest electricity demand from data centers of all U.S. states.[25] As of the time of writing, an industry database shows that Texas is home to over 400 data centers.[26]

Data centers vary in size, but the largest can cover several acres and consume significant amounts of energy to power and cool their computing systems. According to a report from the Electric Power Research Institute, data centers made up 4.6 percent, nearly 22,000 gigawatt hours, of Texas' total electricity consumption in 2023.[27] The report's most aggressive growth forecast estimates that by 2030 data centers could be responsible for over 10 percent of the state's total electricity consumption.[28]

The construction of data centers is growing across the U.S., including in Texas, because of the demands of artificial intelligence. Shown here is a data center in Sterling, Virginia.

Impacts of Winter Storm Uri

The path that Texas is currently traveling to meet this surge in expected electricity demand is linked to the impacts of Winter Storm Uri. In February 2021, the storm brought large amounts of ice and snow and a record-breaking streak of freezing temperatures to Texas.[29] Prolonged low temperatures caused grid load to surge, with demand peaking at 69,871 MW on the evening of February 14 as Texans tried to stay warm.[30] Electric generating units and the power grid began to fail as Winter Storm Uri dragged on, eventually knocking more than half of ERCOT's winter generating capacity offline.[31] A retrospective analysis conducted by the Union of Concerned Scientists found that gas power plants accounted for most of the failed generating capacity across areas impacted by Winter Storm Uri.[32] On February 15, ERCOT instituted rolling blackouts – the largest manually controlled "load shedding" event in U.S. history – moments before demand would have exceeded supply and caused catastrophic grid failure.[33, 34]

During the height of Winter Storm Uri, more than 4.5 million households, encompassing more than 10 million people, were without power.[35] According to a University of Houston survey, more than 69 percent of Texans lost power at some point from February 14 to 20 in 2021.[36] ERCOT did not resume normal operations until February 19.[37] The Texas Health and Human Services Commission ultimately attributed 246 deaths to Winter Storm Uri.[38] The storm caused $11.5 billion in insured losses alone and billions of dollars of total damages across Texas, with one estimate placing the total at $195 billion.[39, 40] The storm also came with environmental consequences. An analysis by Environment Texas, Air Alliance Houston, and the Environmental Defense Fund found that industrial facilities emitted at least 3.5 million pounds of air pollution due to power outages and system failures from the harsh weather.[41]

Texas Energy Fund

Texas' primary legislative response to the electrical grid failure during Winter Storm Uri was to establish the Texas Energy Fund, a program administered by the Public Utility Commission of Texas that is designed to provide $10 billion in loans and grants to incentivize and improve electricity generation

across the state. The Texas Legislature approved the program in May 2023 via the "Powering Texas Forward Act," Senate Bill 2627.[42] The fund was officially established in November 2023 after voters approved the program via a constitutional amendment.[43, 44] The program offers low-interest loans and completion bonuses for new or expanded dispatchable generating capacity within ERCOT's distribution area, grants to improve and maintain electrical transmission and distribution systems outside of ERCOT, and grants and loans for backup power sources at critical infrastructure within the state.[45]

The majority of expected funding, $7.2 billion, is designated to provide low-interest loans and completion bonuses for the construction of new or expansion of existing dispatchable generating units.[46] Generally, a generating unit is "dispatchable" if its output can be adjusted on demand to meet fluctuating electricity needs – the type of generation that was needed during Winter Storm Uri. The language in Senate Bill 2627 specifies that a generating facility is only considered dispatchable if "the facility's output can be controlled primarily by forces under human control" and that energy storage facilities are ineligible for the fund's loans or grants.[47] In practice, these requirements exclude solar and wind energy projects from the program's funding, as their output is not entirely under human control and would require energy storage facilities to function as dispatchable generation.

Texas linemen work to restore power during Winter Storm Uri. Photo by Jonathan Cutrer, Flickr

Under these rules, the fund's money could go to any fossil fuel or nuclear power plant. But so far the program has advanced applications almost exclusively from gas-fired power plants. During the initial application period, the fund received 125 notices of intent to apply for a loan. Developers followed up with 72 official applications, and the state utility commission initially advanced 17 applications, totaling nearly 10 GW of new fossil fuel-fired generating capacity, to the next step - the "due diligence" stage - of the review process.[48] All but one of the applications advanced were for gas fired power plants, the exception being a 132 MW power plant that plans to generate electricity using 40 engines fired by diesel or renewable diesel.[49] Since then, several companies have withdrawn their applications from the due diligence stage and the utility commission has advanced different applications for gas power plants. As of the time of writing, there are 19 applications in the due diligence stage of the review process, seeking $5.15 billion in loans.[50] Eighteen of the applications entail proposals for new gas-fired generation, representing 17 gas power plant projects that could collectively add approximately 9,209 MW of generating capacity to the Texas grid.[51, 52]

Inventory of Proposed Gas Power Plants in Texas

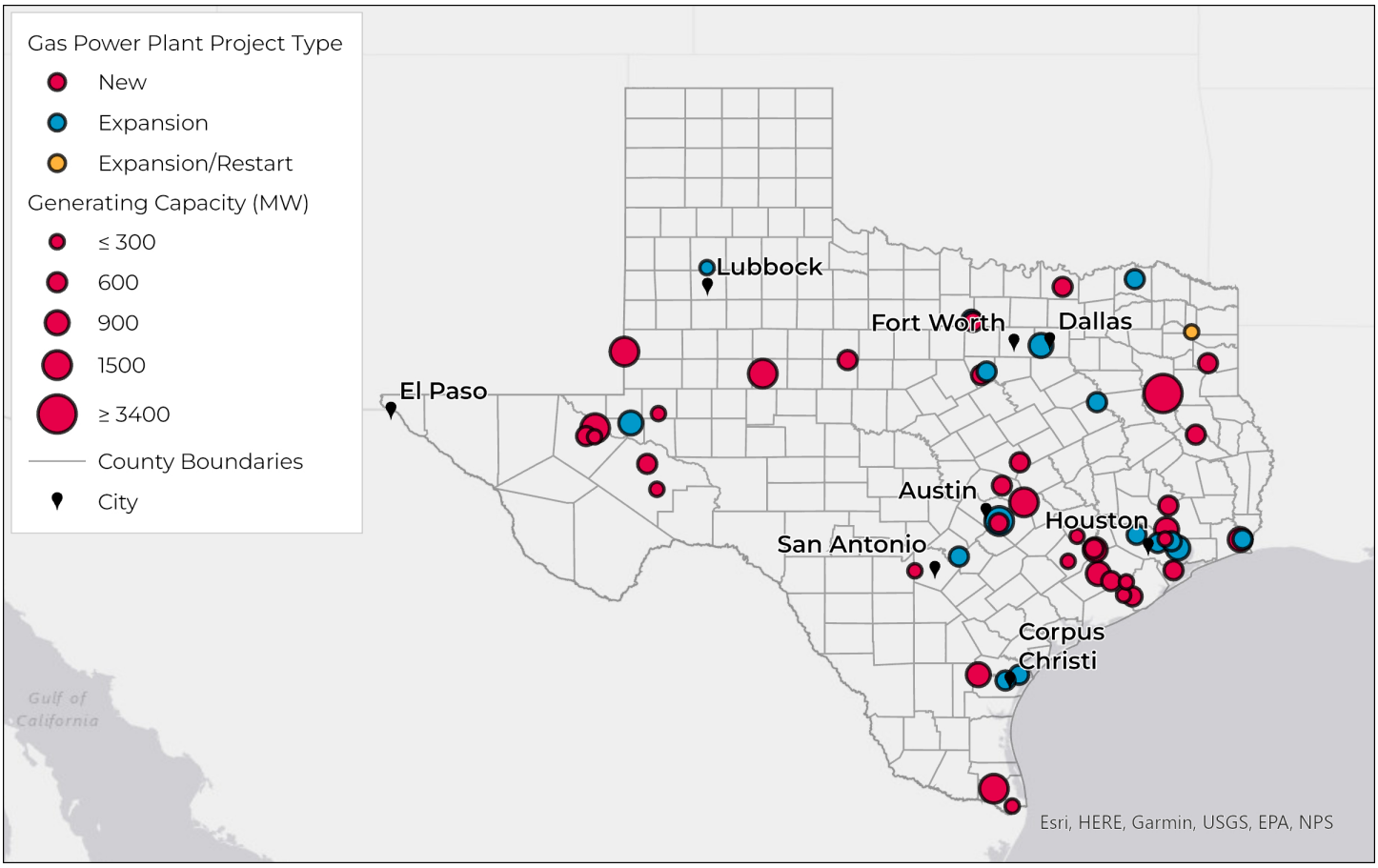
To help Texans stay informed and keep track of the surge of gas-fired power plants proposed in Texas, the Environmental Integrity Project has created a statewide inventory of proposed gas power plant

projects.[53] The inventory was compiled using information from a wide variety of publicly available sources, including the Energy Information Administration, Global Energy Monitor, ERCOT, application documents for the Texas Energy Fund, permit documents from the Texas Commission on Environmental Quality, trade publications, and news articles.

To be included in the inventory, a power plant project must be located in Texas, expect to run primarily off of natural gas, and add at least 100 MW of new generating capacity. This means that the inventory does not include some smaller natural gas generating projects, like those used to power small or medium sized data centers. The inventory contains details for each power plant project, including the expected generating capacity, location, type of generating equipment, estimated completion date, and information about Clean Air Act permits that authorize construction where available. Some projects are missing basic information because they were recently announced and details have not been released. Multiple projects lack permit information because the developer has not applied for necessary Clean Air Act permits.

As of April 2025, EIP's gas power plant inventory contained 130 proposed projects.[54] Cumulatively these plants could add 58.55 GW of natural gas generating capacity to the Texas grid, which could serve 14.6 million residential ERCOT customers during peak demand hours.[55, 56] But, this potential new generating capacity would come at a high cost. The proposed gas power plants could emit millions of metric tons of greenhouse gases, degrade local air quality, and potentially fuel the buildout of upstream natural gas infrastructure and production across the state.

Map 1: Proposed Gas Power Plants in Texas



Note: This map only shows the 54 proposed gas power plants for which we have exact location information.

The map above shows that gas power plants have been proposed throughout the state, with a large cluster in the southeast in and around Greater Houston. The proposed generating capacity of individual plants varies greatly. The smallest projects EIP is tracking are 100 MW – the minimum capacity required for loans or grants from the Texas Energy Fund – while the largest proposed project is 3,400 MW, the proposed projects have a generating capacity of 450 MW on average.[57] The vast majority, over 80 percent (or 108 of the 130 total projects) would be new plants built on previously undeveloped land.[58]

As of the time of writing, there were six proposed gas power plants with Clean Air Act New Source Review permit applications pending before the Texas Commission on Environmental Quality.[59] Plants are required to obtain these permits before they begin construction and must begin construction within 18 months of issuance. Companies can typically apply for extensions that give them up to three additional years to start building. We are listing the following six projects because they are expected to have public comment periods open soon upon receiving draft permits.

Table 1. Proposed Gas Power Plants in Texas with Pending Applications for Clean Air Act Permits

Plant Name	Location	Expected Operating Year	Capacity (MW)
Bastrop Energy Center	Bastrop County	2026	1,170
Gaines County Power Plant	Gaines County	2027	1,100
Vast Sands Power Plant	Ward County	2028	833
Hallsville Natural Gas Plant	Harrison County	2027	450
New Gulf Energy Center	Wharton County	2026	352
Antelope Elk Energy Center	Hale County	2027	210

Source: Project information is taken from air construction permit application documents submitted to the Texas Commission on Environmental Quality as of April 2025.

We were able to collect information on the potential greenhouse gas emissions for 15 of the 130 proposed gas power plants in the inventory. This information came from publicly available permit records. If constructed, these 15 gas power plant projects, with 14,295 MW of generating capacity, could emit around 40 million metric tons of planet-warming greenhouse gases each year.

While we do not have information on the potential greenhouse gases emissions for all of the proposed gas plants in the inventory, we can estimate the total potential to emit using an average emissions factor for gas-fired power plants in Texas from EPA's Emissions & Generation Resource Integrated Database (called "eGRID").[60] Assuming that the remaining 115 proposed gas power plants in the inventory will be built according to current plans and operate like a typical natural gas-fired power plant in Texas, we estimate that they could directly emit 70 million metric tons of greenhouse gases every year.[61] This includes 1,291 metric tons of methane, which has a warming potential 28 times stronger than an equivalent amount of carbon dioxide.[62, 63] Combined with known greenhouse gas emissions, proposed gas power plants could emit up to 110 million metric tons of greenhouse gases every year.[64]

Local Air Quality Impacts

In addition to the millions of metric tons of planet-warming greenhouse gases, these proposed power plants would have a detrimental impact on local air quality. Gas power plants emit nitrogen oxides (NOx), volatile organic compounds (VOCs), sulfur dioxide (SO_2), fine particulate matter ($PM_{2.5}$), carbon monoxide (CO), and a whole host of hazardous air pollutants (HAPs). These pollutants can pose serious threats to local air quality. For instance, $PM_{2.5}$ can penetrate deep into the lungs and bloodstream, which can cause respiratory issues and has been linked to increased risk of heart disease.[65] Gas power plants also release nitrogen oxides, which can harm the respiratory system and can react with other chemicals in the air to produce ground-level ozone — a component of smog — and particulate matter.[66]

Of the 130 gas plants that have been proposed in Texas, 45 have started or completed the state permitting process for obtaining Clean Air Act construction permits. Of these, 34 projects have received final permits, but have not yet been built. Another four have draft permits that have been proposed by the state, but not yet finalized. Six projects (listed in Table 1, on the previous page) have applied for permits but have not yet received them. And one project had its permit cancelled, but we are still considering it a proposed plant because the developers have not indicated that they've given up on the project and may still try to move forward with it.

Developers who have at least applied for Clean Air Act construction permits will have estimated their plants' potential to emit certain pollutants as part of the permit application process. The potential to emit pollution from the 45 projects that have applied for or received permits so far are summarized below, according to their permit documents.

Table 2. Expected Emissions from 45 Proposed TX Gas Plants That Have Received or Applied for Permits (tons per year)

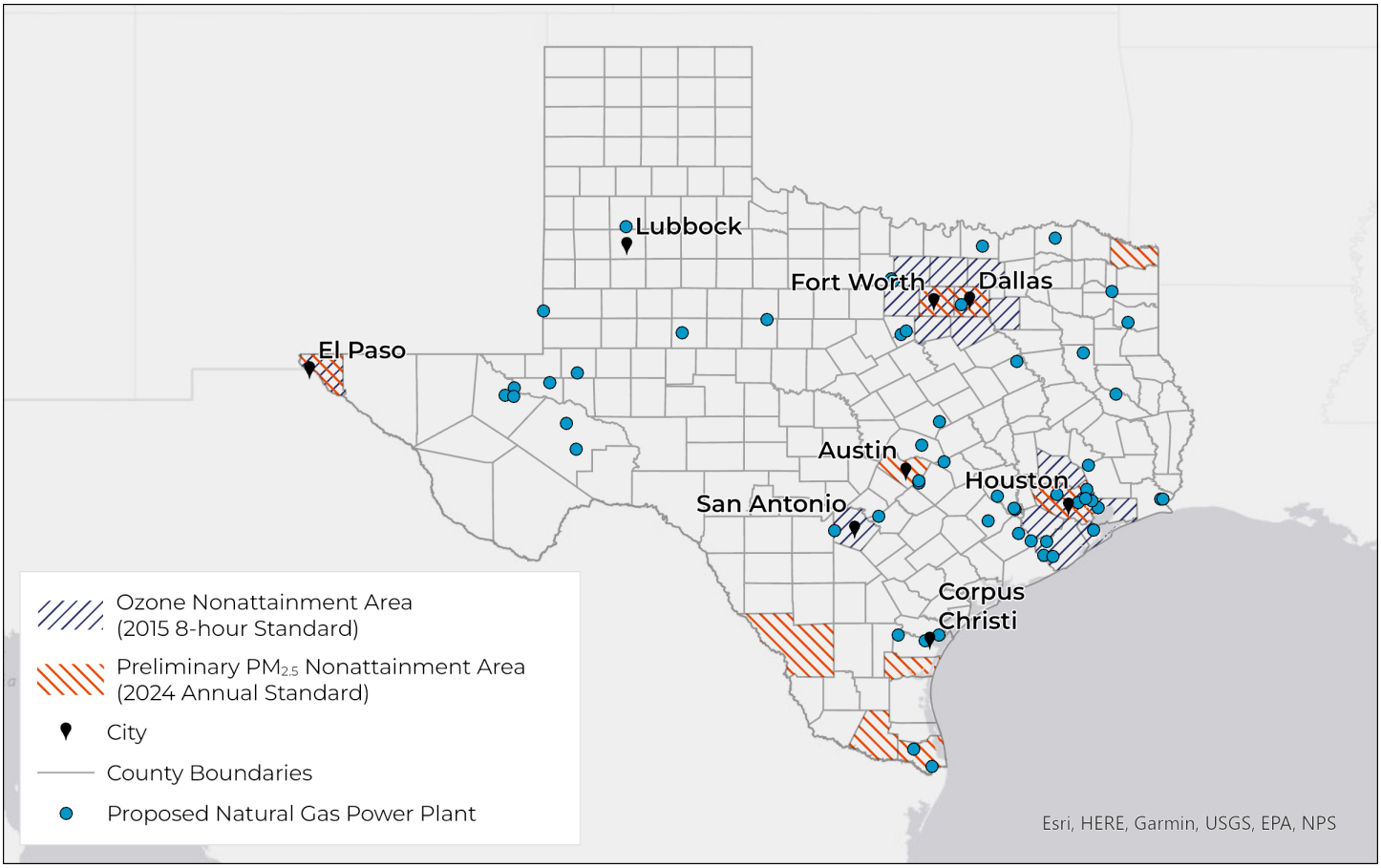
Total Capacity (MW)	Particulate Matter ($PM_{2.5}$)	Nitrogen Oxides (NOx)	Hazardous Air Pollutants (HAPs)	Volatile Organic Compounds (VOCs)	Carbon Monoxide (CO)	Sulfur Dioxide (SO_2)
27,981	4,434	8,055	496	4,708	12,051	1,115

Source: EIP analysis of permit records available for 45 gas plants that have applied for or received Clean Air Act New Source Review permits in Texas as of April 2025. Emissions reflect a power plant's maximum potential to emit certain air pollutants as disclosed by the developing company to the Texas Commission on Environmental Quality in permit documents.

Moreover, several of the proposed gas power plants with known locations would be built in areas already polluted with ozone or fine particulate matter. The Clean Air Act requires the Environmental Protection Agency to set National Ambient Air Quality Standards (NAAQS) for a set of six common air pollutants called "criteria" air pollutants - carbon monoxide, lead, nitrogen dioxide, particulate matter, ozone, and sulfur dioxide.[67] Some of these standards haven't been revised in years, but the EPA updated NAAQS for ozone in 2015 and for fine particulate matter ($PM_{2.5}$) in 2024.[68] EPA's standard from 2015 for ozone concentration over an 8-hour period is 0.070 parts per million, and the 2024 annual $PM_{2.5}$ standard is 9.0 micrograms per cubic meter.[69] Along with these updates, EPA conducted nationwide assessments of air quality data to identify areas across the country that do not meet the NAAQS standards for ozone or $PM_{2.5}$.[70] EPA has not made final attainment or nonattainment classifications using the 2024 $PM_{2.5}$ standard yet, but the agency did conduct a preliminary analysis of counties that may be in nonattainment with the new standard based on 2020-2022 air monitoring data.[71]

Proposed gas power plants are shown in the map below alongside nonattainment areas for ozone and preliminary $PM_{2.5}$ nonattainment areas.

Map 2: Proposed Gas Power Plants in Ozone Nonattainment and Preliminary $PM_{2.5}$ Nonattainment Areas



Note: This map includes only the 54 proposed gas power plants for which we have exact location information. For a full list of proposed plants in ozone nonattainment areas or preliminary $PM_{2.5}$ nonattainment areas, see Appendix A.

At least 14 of the proposed power plants would be located in an ozone or preliminary $PM_{2.5}$ nonattainment area. Of these, five with known emissions in preliminary $PM_{2.5}$ nonattainment areas could emit 383 tons of $PM_{2.5}$ annually. Nine projects in ozone nonattainment areas with known emissions could release 601 tons of nitrogen oxides and 328 tons of volatile organic compounds each year—pollutants that form harmful ground-level ozone. These are only the known emissions from proposed projects as of the time of writing. If more gas plants more forward, emissions in these already polluted areas could increase dramatically. Moreover, additional upstream infrastructure and activity to supply the power plants with natural gas could bring even more pollution to Texas.

Impacts from Natural Gas Extraction, Processing, and Transport

Building 130 new gas-fired power plant projects capable of generating 58 GW of new electricity would require around 1,703 billion cubic feet of natural gas per year.[72] Getting that additional gas out of the ground, processing it, and transporting it to a gas power plant requires a significant amount of infrastructure.[73] This infrastructure includes vast networks of pipelines, tanks, compressor stations, and gas processing plants. This equipment emits health-harming and toxic air pollution, contributes to climate change, consumes and pollutes water, and poses significant risks to human health and the environment.

Using an emissions factor from the U.S. Department of Energy's National Energy Technology Laboratory that accounts for emissions throughout the entire natural gas supply chain, from production to delivery,

we estimate that the 130 proposed gas plant projects would result in an additional 5 million metric tons of greenhouse gases emissions.[74] Taken together, the proposed buildout of natural gas infrastructure and power plants could emit over 115 million metric tons of greenhouse gases annually. That is equivalent to a 13 percent increase over Texas' total greenhouse gas emissions in 2021.[75]

Beyond additional climate-warming emissions, the health and environment-harming impacts of upstream and midstream infrastructure needed to bring natural gas to end markets are numerous and well documented. For example, low birth weight in babies has been linked to proximity to fracking sites.[76] Western Texas is experiencing earthquakes and sinkholes due to the over-injection of produced fluids back underground.[77] Meanwhile, producers are grappling with how to dispose of the increasing amount of wastewater generated from oil and gas wells, which is expected to increase from 20 million barrels of water per day in 2024 to 26 million by 2030.[78] Spills of salty produced water have scarred land to the point that it no longer supports crops or grazing.[79] Oil and gas extraction sites are also sources of hydrogen sulfide, a toxic air pollutant that has killed oil and gas workers in western Texas on multiple occasions.[80]

Gas pipelines leak methane during normal operation[81] and at least 197 incidents related to gas pipelines in Texas were reported to the Department of Transportation in 2024.[82, 83] The Texas Railroad Commission, which oversees oil and gas pipeline infrastructure in Texas, reported a total of 10,786 pipeline incidents in 2023 alone.[84] "Incidents" are defined as releases of 3 million cubic feet of natural gas or more, or gas releases that cause death, hospitalization, or over $50,000 in property damage. The top reasons for these incidents involved people digging into underground gas pipelines.[85] Pipeline incidents, including damage to pipelines caused by earthquakes, have caused explosions and fires.[86] In addition, construction of new major pipelines often involves using eminent domain to seize land from private landowners.

In 2023, there were

10,786

total gas pipeline incidents reported by the Texas Railroad Commission.

Compressor stations, tank batteries, and gas processing plants emit pollutants like nitrogen oxides, volatile organic compounds, sulfur dioxide, and formaldehyde routinely. And because they are connected, if a gas processing plant experiences an upset, upstream compressors and gas collection sites may have to vent excess gas emissions into the atmosphere through flares. Unplanned emission events and upsets at gas pipeline compressor stations, tank batteries, and gas processing plants are the norm in oil and gas fields, caused by human error, poor design or maintenance, equipment failures, power outages, and weather, resulting in emissions of pollutants like sulfur dioxide, volatile organic compounds, and nitrogen oxides each year.[87]

Most compressor stations burn natural gas to run their engines. In 2023, operators of 331 compressor stations across Texas reported emitting a total of 17,803 tons of nitrogen oxides, 8,172 tons of volatile organic compounds, 843 tons of fine particulates (soot), 7,232 tons of carbon monoxide, 850 tons of sulfur dioxide, and 1,598 tons of hazardous air pollution like formaldehyde, acetaldehyde, and acrolein.[88] Electric compressors exist and do not directly emit pollution from burning gas. However, they require additional electricity and grid connections to operate.[89]

Gas processing plants operate like small refineries that purify natural gas by removing other hydrocarbon products, like natural gas liquids used to make plastics and other petrochemicals, and impurities like nitrogen and sulfur. The typical new gas processing plant in Texas is capable of processing around 250 million cubic feet of natural gas per day, but they are often built and expanded incrementally to accommodate new demand while avoiding the Clean Air Act's permitting requirements for "major" new sources of air pollution.

In 2023, the operators of 168 existing gas processing plants in Texas reported emitting 21,093 tons of nitrogen oxides, 16,344 tons of carbon monoxide, 9,043 tons of volatile organic compounds, 9,415 tons of sulfur dioxide, 1,111 tons of fine particulates (soot), and 1,416 tons of hazardous air pollutants like the carcinogens formaldehyde and benzene.[90]

True emissions from gas compressors and processors are likely under-reported due to insufficient monitoring and reporting requirements, the number of unplanned upsets and leaks from gas processing plants, and variable gas composition that can influence emission estimates. Expanding or building additional compressors, processing plants, and pipelines to support additional gas power plants will undoubtedly increase already significant emissions and increase risks to public health and the environment.

Some Air Pollution Permits for New Gas-Fired Power Plants Violate the Clean Air Act

Before a new industrial facility like a gas-fired power plant can be built and operated, it must first obtain all necessary environmental permits from the relevant environmental agency — in this case, the Texas Commission on Environmental Quality (TCEQ). Many facilities require air construction permits before any construction can begin.[91] These permits are required under the Clean Air Act's New Source Review (NSR) program and are specific to a given facility to ensure that it will comply with air quality standards and use appropriate pollution controls before breaking ground. Additionally, the NSR program has requirements for public notice and participation in the permitting process. To comply with these requirements, TCEQ provides public notices when they receive new air construction permit applications and when they prepare a draft permit. Each public notice comes with an opportunity for the public to submit comments and voice their concerns. However, TCEQ has circumvented the typical NSR air construction permit process by authorizing new gas power plant projects under standard permits.

34 proposed gas power plants have received final Clean Air Act construction permits.

25 of these projects received "standard" permits, with less strict air pollution control requirements, generally intended for smaller operations.

Standard permits are general permits prepared by TCEQ intended to authorize smaller operations that are not tailored specifically to a given facility, but instead establish uniform requirements for an entire class of industrial facilities that meet a set of predetermined criteria. There is no public notice given when a facility applies for standard permit coverage, nor does TCEQ provide notice that they intend to issue a facility coverage under a standard permit. This means that the public does not have an opportunity to comment on whether it is appropriate for a specific facility to obtain authorization to construct and operate the facility prior to issuance. Of the 34 proposed gas power plant projects in the inventory that have received a final air construction permit, the majority – 73 percent, or 25 projects in total – received TCEQ's standard permit for electric generating units.[92]

Standard permits do not mandate the more stringent air pollution control systems that major air pollution sources are required to install and operate under the federal Clean Air Act. Under the law, "major sources," are defined as operations that have the capacity to emit at least 250 tons per year of health-damaging "criteria" air pollutants (such as sulfur dioxide, nitrogen oxides, and particulate matter).[93] Facilities that have the potential to emit more than this amount of pollution must be required by their state-issued major source permits to install the "best available control technology." The Clean Air Act also requires public notification and opportunity for local communities to comment or object in public hearings before the state issues permits for major air pollution sources.[94, 95]

However, research by EIP suggests that Texas is issuing the wrong kind of permits for at least a portion of this new wave of gas-fired power plants. The state is rapidly authorizing plants through these weaker "standard" permits, instead of more stringent "major" source permits that require the best available air pollution control technology.[96] This means that gas plants may emit more health harming pollution than what should be allowed under the Clean Air Act. And Texas is not notifying local residents who live near the proposed plants, depriving them of an opportunity to participate in the permitting process to ensure that companies who construct and operate these new gas plants comply with the law.

An examination by EIP of three of the proposed gas plants in Texas found that the state authorized these plants through standard permits meant for minor sources of air pollution, but are large enough to qualify for the more stringent "major" source permits.[97] The three plants are:

- In the south Texas town of Robstown, in Nueces County near Corpus Christi, ENGIE Flexible Generation NA LLC is proposing to build three gas-fired turbines with a total capacity of 930 MW.
- West of Houston, in the Austin County community of Sealy, EmberYork Energy Center LLC is planning to build two gas-fired turbines with a combined capacity of 900 MW.
- Southwest of Houston, in Wharton, Texas, EmberGreen Energy Center LLC is planning to build two gas-fired turbines, also with a combined capacity of 900 MW.

Texas has authorized more than two dozen proposed gas-fired power plants through "standard" permits – not just these three – so it is possible that other new "major" gas power plants will not be required by the state to install the best available pollution control technology.

The turnaround times for the TCEQ to authorize plants through these standard permits, even large gas plants, is also shockingly fast, suggesting that the state is essentially rubber stamping some applications without a meaningful review to ensure compliance with the Clean Air Act. For instance, state regulators approved use of a standard permit for the 900 MW plant proposed by EmberGreen Energy Center LLC within 24 hours after the company submitted its application.[98] Of the gas power plants examined by EIP, TCEQ issued an approval to construct under a standard permit just over 14 days after the initial application.[99]

Constellation Energy Handley Generating Station in Fort Worth, Texas

Looking Ahead

Texas' true future energy demand and how it will be met are still uncertain. The peak energy demand figures presented in this report are estimates, which are subject to change over time. It is difficult to accurately predict all the different factors that contribute to increased electricity demand years down the road. Research has shown that electric utilities often tend to overestimate future electricity demand. For example, a study from the Rocky Mountain Institute found that electric utilities tend to overestimate demand by 1 percent for each year of a forecast.[100, 101] Building new gas power plants based on overestimated demand could lead to avoidable pollution and utility rate increases, as utilities try to recover the costs of building new power plants that customers don't need.[102] While some demand factors can be predicted with relative certainty, like population growth, the demand from industry is less certain.

ERCOT estimates that of the 52 GW of new large-load electricity demand (from industrial facilities with peak demand of at least 75 MW) that will come online by 2031, over 50 percent – 32.6 GW – of the predicted large load growth is expected to come from data centers.[103] A driving force behind the expected growth in data centers is the advent of artificial intelligence (AI) models. AI models require large amounts of computational resources and electricity to function, and usage has exploded over the past decade. A McKinsey & Company survey found that in 2024, 78 percent of organizations reported using AI in at least one business function, compared to just 20 percent in 2017.[104]

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AI is expected to continue growing rapidly in the coming years, as is its electrical footprint. An analysis from the International Energy Agency predicts that global electricity demand from AI-optimized data centers will more than quadruple by 2030.[105] However, AI is a rapidly evolving technology, and while future innovations may reduce energy use, many current forecasts predict that its electricity demand will grow considerably in the near-term. Near-term data center growth could mean even more gas-fired power plants in Texas. In 2024 S&P Global predicted that data centers – especially those in Texas – will continue to choose gas powered generation through at least 2030.[106] There are already at least three gas power plants in the inventory, capable of generating over 1,800 MW of electricity, being developed by AI-focused companies to power data centers.[107, 108, 109]

Ultimately, which gas-fired power plants end up being built in Texas will depend on a variety of economic factors. While the Texas Energy Fund promises incentives to gas power plant developers, supply chain constraints could change the equation. The gas turbine manufacturers can't keep up with the surge in turbine demand from newly proposed gas power plants.[110] Turbine manufacturers are currently trying to ramp up production to overcome record backlogs and keep pace with demand.[111] Industry analysts are predicting that the turbine bottleneck will generate years of delays for new gas power projects.[112]

Nonetheless, Texas political leaders and the state legislature remain dedicated to the fund — the state budget passed at the end of May 2025 includes an additional $5 billion for the Texas Energy Fund, pending the governor's approval.[113] As of the date of this report, the Texas Energy Fund has not dispensed any loans for new generating units and is struggling to keep applicants from withdrawing from the program. In total, over 4.9 GW of potential new gas-fired generating capacity has either withdrawn from or been denied by the fund as of May 2025.[114] Thus far, the Public Utility Commission of Texas has been able to fill the generation gap left by withdrawn or denied projects with applications from other developers proposing new gas-fired generating capacity.[115]

Conclusion

Texas is heading in the wrong direction to power its future. Building more natural gas infrastructure and power plants would saddle Texas' growing population with more health-harming pollution and contribute planet-warming greenhouse gases while the state is already experiencing more intense droughts, higher temperatures, and more extreme weather events.[116] Instead of directing taxpayer money to gas power plants through the struggling Texas Energy Fund, the state should build on the success of its booming renewable energy industry. Texas is currently leading the country in renewable energy generation. As of early 2025 the state is estimated to have installed nearly 80 percent more combined wind, solar, and battery capacity than any other state.[117, 118] The state should encourage more solar, wind, and large-scale battery storage units, rather than promise billions to gas-fired power plants that will lock in more pollution for decades to come.

When TCEQ reviews permit applications for new power plants, it must assess the true pollution potential of each facility. For "major sources," it must issue more stringent permits that require companies to invest in the best available pollution control technology, as mandated by the Clean Air Act. Moreover, because Texas taxpayers are helping to foot the bill for these facilities, it is even more important for residents to receive notice of proposed projects, have their questions answered at public hearings, and be provided with an opportunity to submit comments and ensure these new gas power plants comply with the law before TCEQ authorizes construction.

Authors

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Appendix A: Detailed Inventory of Proposed Gas Power Plants in Texas

A full version of the gas power plant inventory, current as of April 2025, can be found here.

For an online map, click here.

Data notes:

- **Capacity:** Wherever possible, EIP researchers have recorded a power plants' estimated maximum rated capacity. However, this information is not readily available for all power plants. For instance, a company press release states that they intend to build a "new 500 MW power plant" without stating whether that is the estimated net generating capacity or maximum rated capacity. Thus, the capacity figures presented, while accurate, do not exclusively represent a plant's maximum rated capacity, and differ according to information availability.
- **Latitude & Longitude:** The exact point location for a power plant is either directly taken from permit documents or approximated using project maps.
- **Permit Dates:** Dates for permitting events are taken from the Texas Commission on Environmental Quality's permitting website. A given permit's application date and issuance date are taken from the relevant air construction permit project record page on TCEQ's Central Registry database.
- **Potential to Emit:** Information on a project's potential to emit a given air pollutant is taken from air construction permit documents. Permit documents are made available for viewing and download via links in the gas power plant inventory.
- **Texas Energy Fund:** Information as to a project's involvement with the Texas Energy Fund, specifically the in-ERCOT dispatchable generating loan program, is taken from documents published by the Public Utility Commission of Texas' Interchange Filing Search under Docket No. 56896.

Appendix B: Methodology

Identifying Proposed Gas Power Plants

EIP identified proposed power plants in Texas using the following sources: Notices of Intent submitted for the Texas Energy Fund, Global Energy Monitor's Global Oil and Gas Plant Tracker, ERCOT's GIS Reports, the Energy Information Administration's 860M datasets, news articles, and company press releases and statements. To be included in the inventory a proposed project must be within the state of Texas, expect to be primarily fired by natural gas, and add at least 100 MW of new generating capacity.

When reviewing projects listed in the Notices of Intent submitted to the Texas Energy Fund, researchers at the Environmental Integrity Project conducted due diligence using publicly available information to exclude any proposals that could not reasonably be expected to use natural gas. Given the limitations of project eligibility under the Texas Energy Fund, it is likely that any project that would not run on natural gas would be fueled by another fossil fuel. As the time of writing, only one plant initially believed to be natural gas-fired was later found to plan on using a different fuel—diesel. It is possible that additional information may emerge in the future clarifying the specific fuels that proposed plants intend to use for electricity generation, the inventory will be updated accordingly.

Proposed Power Plants

In this report, we focus on the potential pollution impacts of natural gas power plants in Texas that are classified as "proposed." "Proposed" is one of several construction status categories we use to track project development. A project is considered proposed if it has been announced or planned by a company but has not yet begun construction. Projects at this stage may vary widely in their progress—some may have applied for Clean Air Act air construction permits, others may have received them, and some may not have submitted a permit application yet. Projects are given different construction statuses if they have been stalled or delayed - "On Hold" - or if they have received the necessary Clean Air Act air construction permits - "Permitted, not under construction" - but these are still considered "Proposed" projects.

Brief definitions of the construction status categories used in this report and the gas plant inventory are provided below:

- **Proposed:** Proposed projects have been announced or planned by a company but are not yet under construction. Proposed projects can be at any stage of the permitting process; they may have applied for the necessary construction and operating permits, received draft or final permits, or not applied for any permits.
    - **On Hold**: A proposed project that has been stalled or delayed and is not yet operational. Companies may put a project "on hold" until there are favorable conditions to continue moving forward.
    - **Permitted, not under construction:** A proposed project that has received the necessary air construction permits, but it is not yet under construction.
- **Under Construction:** A project that is currently being built.
- **Partially Operating:** A project that has started some operations but is not yet running at their fully planned capacity.
- **Operating:** Projects have completed construction and are up and running for commercial purposes.

- **Canceled:** A project is considered canceled if the parent company has announced or otherwise made clear that they are no longer pursuing it.

Emissions Information

Where available, we have included information provided by developing companies as to the potential emissions of a given power plant. This "potential to emit" information represents the total amount of a pollutant that could be emitted from an emission source operating at maximum design capacity, after accounting for reductions required by federally enforceable pollution controls. These figures are meant to provide an upper-bound estimate of a facility's potential total air pollution. Given the timeframe covered by this report, greenhouse gas emissions figures presented in older permit documents used global warming potentials from the IPCC's Fourth Assessment Report (AR4), while more recent permit documents used global warming potentials from the IPCC's Fifth Assessment Report (AR5).

Summarizing Criteria and Hazardous Air Pollution from Upstream Natural Gas Infrastructure

EIP used the 2023 Texas Commission on Environmental Quality's Emission Inventory to estimate emissions from existing gas processing plants and compressor stations in Texas. We identified plants by using SIC codes, search terms like "gas processing plant," "compressor station," or "booster station," and when plant type was unclear, we reviewed other TCEQ records such as permit documents and the Commission's central registry. We identified 168 gas processing plants and 331 compressor stations. This is likely an underestimate of the number of these kinds of facilities in Texas.

Estimating Greenhouse Gas Emissions

Direct Emissions

Where possible, we provided information on a plant's potential to emit greenhouse gases as calculated and disclosed by the developing company in air construction permit documents. But, this information is only available for 15 of the proposed gas power plants. To give Texans a sense of the potential climate impacts of the remaining 115 proposed gas-fired power plants in Texas we estimated the potential direct greenhouse gas emissions from this subset of proposed power plants. This required a series of assumptions and calculations, which are explained below.

To estimate direct greenhouse gas emissions from the 115 proposed gas power plants, we first estimated their total generating capacity, which was compiled using the various sources described earlier - 44,255 MW. We assumed that all proposed plants will be built and operate at their currently proposed capacity. We don't know how these plants will operate once constructed, so we had to estimate a capacity factor for the proposed plants. This is the ratio of actual energy produced to the energy that could have been produced at full power during the same time period. The type of generating technology that will be used at a gas power plant can serve as a proxy for its potential capacity factor.

As of 2022, 84 percent of natural gas generating capacity in the U.S. came from two types of plants: combined-cycle plants, which use both gas and steam turbines, and simple-cycle plants, which use only gas turbines.[119] In 2023, nearly all new natural gas capacity (9,274 MW) came from these two types—7,376 MW from combined-cycle and 1,756 MW from simple-cycle plants.[120] While technology details are currently unavailable for most of the 115 proposed natural gas plants we're analyzing, the national trend strongly suggests they will also be either combined-cycle or simple-cycle. In Texas, combined-cycle plants operated at an average capacity factor of 58.5 percent in 2023, while simple-cycle plants averaged

31.1 percent.[121] To reflect a likely mix of both, we used their average—44.75 percent—as a reasonable capacity factor for the proposed plants. With this capacity factor we are effectively assuming that the proposed gas power plants will operate at full capacity for approximately 3,920 hours annually. Using total estimated capacity, we estimated that the 115 proposed plants would operate at full capacity for 3,920 hours and generate 173,484,888 megawatt hours annually.

To estimate the direct greenhouse gas emissions from this annual electricity generation, we used emissions factors for carbon dioxide equivalent and methane provided by the Environmental Protection Agency's eGRID database. Average emissions factors for natural gas generation in Texas in 2023 were 893.99 lbs CO_2e/MWh - calculated using global warming potential values from the IPCC's Fifth Assessment Report (AR5) - and 0.0164 lbs CH_4/MWh. With these emissions factors we calculated the following emissions scenarios.

Table 3. Estimated Direct Emissions by Capacity Factor for 115 Proposed Gas Power Plants in Texas Without Potential-to-Emit Information for Greenhouse Gases

Operating Scenario	Capacity Factor	Total Methane Emissions (Metric Tons)	Total CO_2e Emissions (Metric Tons)
Plants operate like average combined-cycle plant in Texas	55.85%	1,611	87,799,054
Plants operate like mixture of average combined-cycle and simple-cycle plants in Texas	44.75%	1,291	70,349,286
Plants operate like average simple-cycle plant in Texas	31.1%	897	48,890,789

Upstream and Midstream Emissions

To estimate the potential greenhouse gas emissions from natural gas production, processing, and transmission, we estimated the energy content of the annual electricity generated by proposed gas power plants. According to the Energy Information Administration's energy conversion calculator, 1 kilowatt hour of electricity is equivalent to 3.6 megajoules of energy, thus the energy content of the estimated annual electricity generated by the proposed gas power plants is over 826 billion megajoules.[122]

A life cycle analysis of natural gas production by the U.S. Department of Energy's National Energy Technology Laboratory estimated, using global warming potential values from the IPCC's Fifth Assessment Report (AR5), that each megajoule's worth of shale gas extracted from the Gulf Coast Basin and delivered to the southwest United States would result in 6.98 grams of carbon dioxide equivalent (CO_2e).[123] However, the upstream greenhouse gas emissions are highly dependent on the extraction method and the production basin, as well as the length of pipeline transporting natural gas from production sites to the gas plant. We do not know how the proposed gas plants will acquire their natural gas, and it is likely that the natural gas required would come from a variety of different sources. The Gulf shale gas emission factor is a minimum emission scenario for Texas. Natural gas produced from a different basin or using another extraction technology would increase the upstream emissions. For example, natural gas extracted using conventional methods from the Anadarko Basin would emit 15.74 grams of CO_2e per megajoule. At the maximum, natural gas extracted conventionally from the Uinta Basin in Utah and delivered to the southwest United States would emit 37.55 grams of CO_2e per megajoule. It should be noted that while the National Energy Technology Laboratory's emission factor does include methane emissions, it assumes a relatively low methane emission rate compared to other publications.[124]

Table 4. Estimated Upstream and Midstream Emissions by Capacity Factor for all 130 Proposed Gas Power Plants in Texas

Operating Scenario	Capacity Factor	Total CO_2e Emissions (Metric Tons)
Plants operate like average combined-cycle plant in Texas	55.85%	7,198,031
Plants operate like mixture of average combined-cycle and simple-cycle plants in Texas	44.75%	5,767,447
Plants operate like average simple-cycle plant in Texas	31.1%	4,008,214

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