THE RELATIONSHIP BETWEEN NATURAL GAS AND RENEWABLE ENERGY

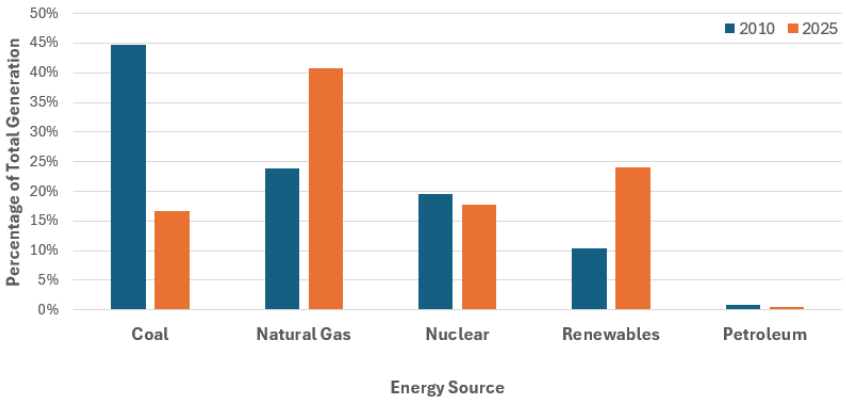
The United States relies on a diverse mix of resources to generate the electricity we need to meet growing demand reliably and affordably. In 2025, America generated the majority of its electricity from the following energy sources: natural gas (~41%), coal (~17%), and nuclear (~18%), as shown in Figure 1.[1]

This generation resource mix is constantly evolving as new technologies become more affordable, fuel resources become more or less available, and new regulations impact the construction of new pipelines and power plants and the continued operation of existing infrastructure. Current power generation resources are drastically different than the resource mix from a decade ago. For example, in 2010, natural gas only accounted for about 24% of all electricity generated – about 17% less than in 2025 (see figure 2 below).[2]

Figure 1: Sources of U.S. Electricity Generation, 2025	
Natural Gas	40.8%
Coal	16.6%
Nuclear	17.7%
Renewables - Wind: 10.5% - Hydropower: 5.6% - Solar: 6.7% - Biomass: 1.0% - Geothermal: 0.4%	24.1%
Petroleum and other	0.7%
Other gases	0.3%

Source: *EIA, 2026, https://www.eia.gov/energyexplained/electricity/electricity-in-the-us.php*

Figure 2: Comparison of U.S. Power Generation by Source



[1] EIA, https://www.eia.gov/energyexplained/electricity/electricity-in-the-us.php
[2] EIA, https://www.eia.gov/totalenergy/data/browser/index.php?tbl=T07.02A#/?f=A&start=1949&end=2025&charted=1-2-3-5-8-14

The American power industry is facing numerous challenges. One is the ongoing retirement of older power plants (mainly coal and nuclear), as the costs of meeting new federal and state emissions regulations, combined with lower natural gas prices, make them less competitive. In 2026 alone, generators plan to retire nearly 11 gigawatts (GW) of electric generating capacity in the United States, 58% of which is expected to be coal fired, with natural gas units accounting for the remaining 42%. The retiring natural gas capacity is largely made up of older steam turbine units, which are less efficient than many of the newer combined-cycle units.[3]

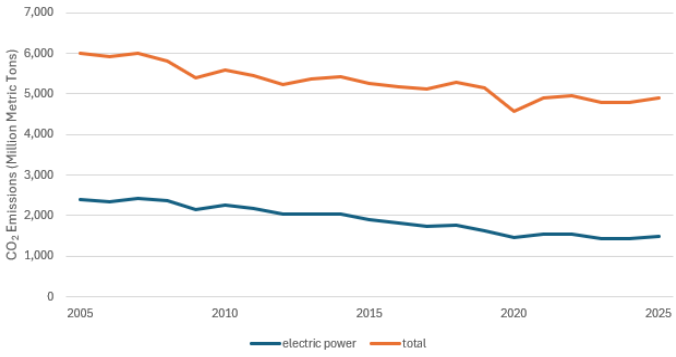
THE RISE OF NATURAL GAS

U.S. domestic natural gas production has experienced an unprecedented increase over the past 20 years, largely due to developments in drilling technologies such as hydraulic fracturing and horizontal drilling. This increased supply of affordable natural gas has led many power generators to shift away from coal and nuclear power generation.

Additionally, several regulations and rules, including the Environmental Protection Agency's (EPA) Mercury and Air Toxics Standards (MATS), have increased interest in phasing out older coal-fired plants, leading many power generators to increase the use of existing natural gas power plants and to develop new gas-fired plants as a cleaner, more affordable alternative. 101 new natural gas-fired generators are expected to come online in 2026, adding approximately 6.2 GW of generating capacity, with substantially larger additions planned later in the decade.[4]

This switch from coal-fired to natural gas-fired electricity generation has provided numerous environmental benefits. According to the U.S. Energy Information Administration (EIA),

Figure 3: U.S. Energy-Related CO_2 Emissions, 2005–2025



Source: EIA, 2026, https://www.eia.gov/environment/emissions/carbon/

[3] EIA, 2026, https://www.eia.gov/todayinenergy/detail.php?id=67206
[4] EIA, 2025, https://www.eia.gov/electricity/annual/html/epa_04_05.html

"burning natural gas for energy results in fewer emissions of nearly all types of air pollutants and carbon dioxide (CO2) emissions than burning coal."[5] These lowered emissions from natural gas-fired plants have contributed significantly to the recent dramatic drop in CO_2 emissions nationwide. For example, CO_2 emissions from electricity generation in 2025 were more than 38% below their 2005 levels.[6] This long-term decrease in CO_2 emissions occurred even as U.S. power generation reached a record high, surpassing the previous record set in 2024.[7]

WHAT ABOUT RENEWABLES?

Although renewable energy sources such as wind and solar power are increasing their share of the electricity mix each year, they currently make up about 24% of total electricity generation in the United States.[8] A major barrier to greater utilization of wind and solar power is their low capacity factor, or the amount of time they are able to generate electricity at full capacity. Wind and solar power facilities are intermittent, meaning they can't generate electricity when the wind isn't blowing or the sun isn't shining. According to Natural Allies for a Clean Energy Future, "solar power generates electricity approximately 25-30% of the time, while onshore and offshore wind produce power up to 35% and 55% of the time, respectively"[9]; compared to an average of ~43% for conventional coal-fired power plants, ~60% for combined cycle natural gas-fired plants, and ~92% for nuclear plants.[10] When onshore wind turbines are only providing electricity at their full capacity at an average of 34.3% of the time, they sit idle or produce minimal power the remainder of the time. This puts renewable energy at a disadvantage to fossil fuel and nuclear-fueled power generation plants because power grid operators value dispatchable, non-intermittent generation sources.

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On average, wind turbines are only providing electricity at their full capacity about 34% of the time, compared to nearly 60% for combined cycle natural gas-fired power plants.

[5] EIA, 2024, https://www.eia.gov/energyexplained/natural-gas/natural-gas-and-the-environment.php
[6] EIA, 2026, https://www.eia.gov/environment/emissions/carbon/
[7] Ibid.
[8] EIA, 2026, https://www.eia.gov/totalenergy/data/browser/index.php?tbl=T07.02A#/?f=A&start=1952&end=2025&charted=1-2-3-5-8-14-13-15
[9] Natural Allies for a Clean Energy Future, https://www.naturalalliesforcleanenergy.org/benefits-of-natural-gas/reliable-energy-to-support-renewables/
[10] EIA, 2025, https://www.energy.gov/ne/articles/what-generation-capacity



Battery storage is widely touted as an environmentally benign technology for backing up intermittent wind and solar generation. The intermittency of renewable power sources could be mitigated by storing energy in batteries when it is not needed and using it when demand spikes. However, large scale battery facilities using current battery technology are not able to provide the storage capacity and power output required at a reasonable cost. They also require large land areas, and their manufacture and operation have significant environmental impacts. Kinder Morgan's engineers have estimated that it would take more than one billion Tesla Powerwall batteries at a cost of more than $3 trillion dollars to store the equivalent amount of energy in one of KM's larger natural gas storage fields. Therefore, intermittent power sources such as wind and solar must be complemented by dispatchable generation that can be ramped up and down quickly, which, in most cases, means natural gas-fired generation. Natural gas-generated electricity is reliable, clean, flexible, and able to be quickly dispatched at scale to address power shortages, regardless of the weather.

Another problem facing renewable energy is land use. Solar and wind turbines need more open space than natural gas, coal, or nuclear power plants. According to the Princeton Net-Zero America Project, the land area required to power a 100-watt TV for a year is just 0.1 square meters of land with natural gas, compared to 14 square meters with solar power and 37 square meters with wind power.[11]

[11] Princeton Net-Zero America Project, 2021, https://netzeroamerica.princeton.edu/img/energy-land-use-finalprintable-2021.pdf

Currently, the largest wind power plant in America is the Alta Wind Energy Center in the Mojave Desert in California, with an installed capacity of approximately 1,550 MW, consisting of more than 600 windmills over 3,200 acres (5 square miles).[12] However, assuming its average capacity factor is the same as the national average (~34%), it generates approximately 12,648 mega watt hours (MWh) (1,550 MW x 24 hours x 34%) during an average day. By comparison, the largest natural gas power plant in the United States is the West County Energy Center (WCEC) in Palm Beach County, Florida, which has a nameplate capacity of 3,750 MW and sits on 220-acres.[13] Assuming the WCEC runs at the roughly 60% average capacity factor for a natural gas combined cycle power plant, it generates approximately 54,000 MWh (3,657 MW x 24 hours x 60%) during an average day. The WCEC is able to generate over four times the power on less than one-fourteenth of the land compared to the Alta facility.

NATURAL GAS: A KEY COMPONENT OF OUR ENERGY FUTURE

Natural gas power generation serves as an excellent complement to renewable energy sources because, among other reasons, natural gas provides the reliability and flexibility that renewable energy lacks. Wind and solar are unpredictable sources because their power output is dependent on weather conditions. In contrast, natural gas can be dispatched within minutes, providing reliable power generation at any time. This flexibility makes natural gas a valuable backup to renewables, supporting expansion without compromising reliability.[14] Additionally, “the natural gas network provides an extremely high level of reliability and resiliency for customers because of the physical properties of the system. The redundancy and interconnectedness of the grid provides essential resiliency to protect families and businesses, particularly when it is needed most.”[15]

Due to the current abundance and relatively low environmental impact of natural gas, power generators are looking to build new natural gas-fired power plants to back up renewable energy sources and guarantee the delivery of reliable power. Essentially, in order for wind and solar energy

According to the North American Electric Reliability Corporation (NERC), "Natural gas for electricity generation is an essential fuel that bridges the rapid development of variable energy resources."

[12] Sustainable Power News, 2024, https://sustainablepowernews.com/alta-wind-energy-center/
[13] Florida Power & Light, https://www.fpl.com/clean-energy/natural-gas/west-county.html
[14] Progressive Policy Institute, 2020, https://www.progressivepolicy.org/wind-solar-and-gas-managing-the-risks-of-americas-clean-energy-transition/
[15] Ibid. at 9

sources to continue their expansion, they need to be complemented by a simultaneous expansion of reliable backup energy sources, such as natural gas-fueled power plants.

Because renewable energy sources still require reliable backup, future demand for natural gas is expected to grow. According to the North American Electric Reliability Corporation (NERC), "Natural gas for electricity generation is an essential fuel that bridges the rapid development of variable energy resources," such as wind and solar. In this way, natural gas enables the continued expansion of renewables.[16]

When renewables underperform, natural gas acts as a temporary replacement to provide the necessary capacity. Therefore, when inevitable weather events cause the wind pattern to change or the sun to go down, facilities can still meet demand.

As a result, natural gas and renewable sources should be jointly utilized to reduce emissions and ensure a stable power supply. Fossil fuel generation, therefore, should not be seen as a barrier to renewable energy development, but rather as a key ally.

MORE INFRASTRUCTURE IS NEEDED

Natural gas and renewables are not mutually exclusive solutions to a greener energy future; they are both necessary pieces of the U.S. energy mix. In order to continue to expand natural gas power plants to replace the nation's aging coal and nuclear power plants, as well as backup renewable energy sources, additional pipelines will be needed.

Many companies, including Kinder Morgan, are meeting the need for additional natural gas supply. Approximately 40% of all natural gas produced in the country moves through Kinder Morgan pipelines, giving us a key role to play in the renewable energy future. Kinder Morgan takes its commitment to the environment very seriously, and is proud to be contributing to the advances in infrastructure development needed to help our country's energy future.

[16] NERC, 2022, https://www.nerc.com/globalassets/programs/rapa/ra/nerc_ltra_2022.pdf