

Frequently Asked Questions

What is the average production rate of a well, and how does this rate differ between oil wells and natural gas wells?

In 2023, the average oil well produced 30 b/d (or about 39 BOE/d, if including natural gas), and the average natural gas well produced about 196,991 cf/d (about 37 BOE/d of total oil and natural gas). The distribution by well size, however, is generally skewed. Many wells produce smaller volumes per day, and fewer wells produce very large volumes per day. In 2023, 77% of the more than 918,068 U.S. wells produced 15 BOE/d or less, and 7% of the wells produced more than 100 BOE/d.

What is the source of our data, and how do we collect it?

Our data source is Enverus. We receive a monthly download from Enverus containing the most recent production information. This commercial data source collects data from various state agencies involved in regulating oil and natural gas production. In this year's report, we are using the November 2024 download of the Enverus data.

How are the reported volumes consistent with other data sources?

The total volumes in the distribution tables represent a snapshot of available data at the time we assembled the report and may not exactly equal other related data, including other EIA sources. Differences sometimes exist in:

- The timing of updates from state and commercial sources
- The availability of state-level aggregate production data versus well-level data
- The definition of a well and which entities we counted and summed

How often do we collect well-production data for the Lower 48 states?

Some states make data available within a few months after a new well begins production, and other states may take more than 18 months to release that data. The average lag between a new well's first production and reported production in the database is six to eight months.

In addition, states sometimes revise historical data because they continue collecting and digitizing older well datasets or their databases. States may also revise data if they identify inaccuracies.

How often will we update this report?

We plan to update this report each year in December, when complete or nearly complete data for the previous year are available for most states.

Does a natural gas well remain a natural gas well during its entire production history?

In this report, we sometimes classify a well as a natural gas well in one year and as an oil well in another year, and vice versa, depending on a well's GOR. We use this approach because the respective volumes of liquid fuels and natural gas produced by a well can change significantly during the well's production history.

Do we distinguish between associated natural gas and nonassociated natural gas?

The report distinguishes between [associated](#) and [nonassociated](#) natural gas based on whether we classify the well as an oil well or a natural gas well. If we classify the well as a natural gas well, then we consider the natural gas as nonassociated gas and the liquid fuels as condensate, which is counted as oil. If we classify the well as an oil well, then we consider the natural gas as associated gas and the liquid fuels as oil.

How do we account for lags in data reporting?

We include notes in the tables to indicate states that are missing current data because of a lag in annual reporting. For missing years, we repeat a state's latest data. We don't attempt to estimate data that may be missing within a reported year. Appendix A provides a summary table of missing or incomplete state data.

How long after a well starts producing is it classified into a production-rate bracket?

We include a well in our analysis as soon as data for the first month of production are available in our database.

Do all wells produce both oil and natural gas?

Most wells produce both oil and natural gas, but some wells produce only one or the other.

Does the specific reservoir, formation, or play determine the amount of oil and natural gas produced?

Yes. Different zones within the same reservoir (depending on the hydrocarbon content, depth, and burial history) will produce only liquids, a mix of liquids and natural gas, or only natural gas.

Why do some states have productive drilling sites and others do not?

The best producing areas are often large basins with thick layers of sedimentary rock that accumulated over a long time and also contain oil and natural gas. States such as North Dakota, Texas, and Pennsylvania have productive drilling sites because they cover large areas of these basins. Subsurface geology and paleogeography are the most important factors in determining whether a state may be an oil and natural gas producer.

Has the productivity of wells changed since horizontal drilling technology and hydraulic fracturing technology have advanced?

Horizontal drilling and [hydraulic fracturing](#) have greatly increased both oil and natural gas production rates of onshore wells in the United States. The decline rates of hydraulically fractured horizontal wells within shale or tight formations are typically greater than for wells drilled vertically into conventional reservoirs.

Our estimates for production derived from shale or tight formations is available in our [Short-Term Energy Outlook](#).

What is a *stripper well*?

A *stripper well*, also called a *marginal well*, is an oil or natural gas well that is nearing the end of its economically useful life. These wells can continue to produce small volumes for long periods. Many of these wells are still operating, and together they produced approximately 6% of total U.S. oil and natural gas in 2023. The Interstate Oil and Gas Compact Commission defines a stripper well as a well that produces 10 b/d or less of oil or 60,000 cf/d or less of natural gas during a 12-month period. The Internal Revenue Service (IRS)—for tax purposes—defines this type of well as one that produces 15 b/d or less of oil over a calendar year. In addition, 15 b/d or less of oil converts to 90,000 cubic feet or less of natural gas per day over a calendar year. We use the IRS definition.

What happens to a well after it stops producing oil or natural gas?

Operators usually plug and abandon nonproducing wells. If they suspect significant amounts of hydrocarbons are still in the reservoir, the well may undergo secondary or tertiary recovery.

What is the difference between gross natural gas, wet natural gas, and dry natural gas?

You can find definitions for [natural gas gross withdrawals](#), [wet natural gas](#), and [dry natural gas](#) in our glossary.

Are any wells still drilled using only conventional drilling practices?

Yes, some [vertical wells](#) are still drilled and completed without hydraulic fracturing; however, these wells and older completion techniques are becoming less common. Based on the larger number of wells and footage drilled, horizontal drilling combined with hydraulic fracturing has become standard practice for oil and natural gas production in the United States.