



Q&A: 2022-2023 Natural Gas Market Conditions and LNG

Winter Natural Gas Market Insights from
Natural Gas Supply Association President and CEO Dena Wiggins
and **Center for LNG Executive Director Charlie Riedl**



1. What is happening with natural gas prices this winter?

Dena Wiggins: Government forecasters have predicted higher energy prices across nearly all energy sources this winter, and that includes natural gas. In this year's [Winter Outlook](#), NGSA has also projected upward pressure on prices compared to previous winters based on careful analysis of many key market factors.

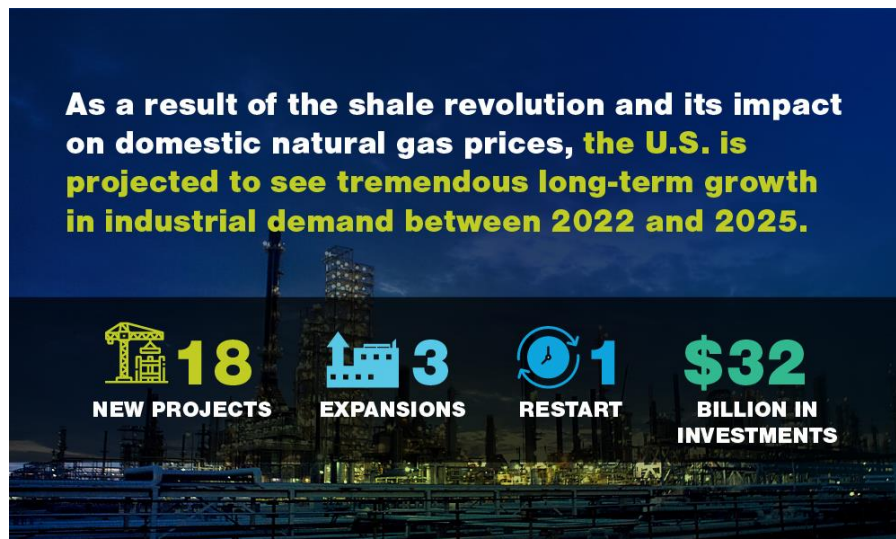
2. Why are you projecting a winter-over-winter rise in natural gas prices?

Dena Wiggins: Our Winter Outlook shows several factors putting pressure on natural gas prices this year.

- The most significant factor is that we just experienced the [third-hottest summer on record](#) in the U.S., which increased energy prices and demand at the time of year when natural gas buyers typically are stocking up their storage inventories in preparation for the winter ahead.
- Storage is also a factor. The combination of high summer demand and prices slowed the pace for refilling [natural gas storage](#) in preparation for winter. Because storage was refilled to below-average levels at elevated prices, it will have slightly less ability to mitigate prices later this winter. *(See question #5 for more on storage.)*
- Another contributing factor is growing demand from the industrial sector. Not only are existing facilities that rely on natural gas for both fuel and feedstock running more frequently, but brand-new facilities are coming online this year and next.

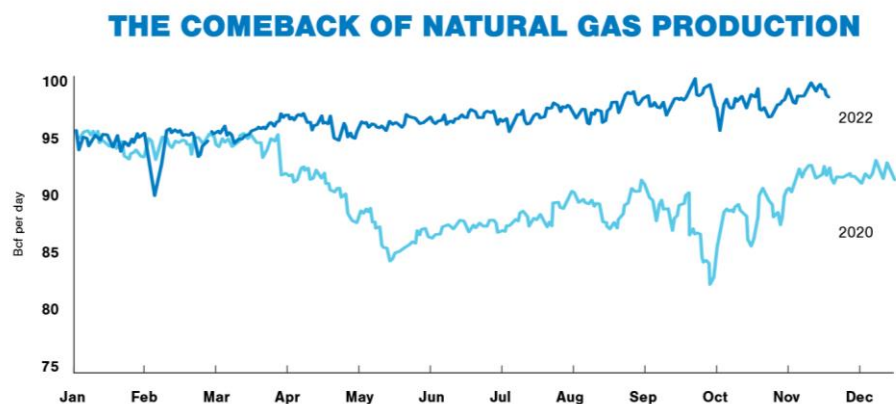


- Lastly, Russia's invasion of Ukraine triggered an energy crisis in Europe and elevated the importance of U.S. liquefied natural gas (LNG) exports to Europe. Our allies in Europe desperately need our help to keep the lights and heat on this winter and in response, the U.S. struck agreements with our allies in the EU and the UK to provide U.S. LNG. (See #6 for more on Europe's energy crisis and LNG)



3. Can the natural gas industry do anything about the higher prices here?

Dena Wiggins: When demand is high, the best thing we can do for our customers is to increase natural gas supply. The good news is that natural gas production reached record levels in November, and December shows promise of even greater increases. As more natural gas flows to market, it should place downward pressure on prices.



S&P Global Commodity Insights, Gas Daily Market Fundamentals, Dec. 2022

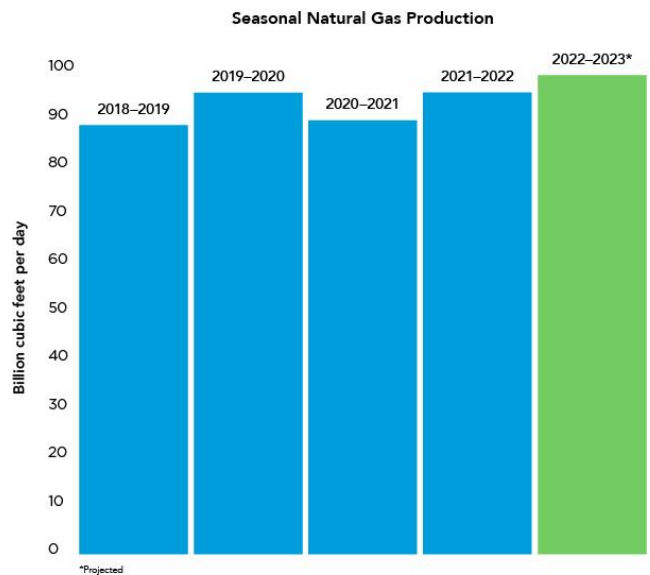


The new monthly highs of natural gas production seen in November and projected for December, represent a 4% increase winter-over-winter increase, and should help ease market conditions as more supply flows into the market. The Energy Information Administration (EIA) has projected that [natural gas production will reach a new record in 2022](#) leading to declining natural gas prices beginning in the spring. (Rystad Energy, Moody's Analytics, Platts, EIA)

NOVEMBER AND DECEMBER NATURAL GAS PRODUCTION IS REACHING **ALL-TIME HIGHS HEADING INTO 2022-2023 WINTER.**

THIS INCREASE IN PRODUCTION WILL PUT **DOWNWARD PRESSURE ON PRICES** AS MORE SUPPLY FLOWS INTO THE MARKET.

Sources: Energy Information Administration, Energy Ventures Analysis Inc.



4. What about winter weather?

Dena Wiggins: Weather is a major factor in the natural gas market and difficult to predict. We are relying on the National Oceanic and Atmospheric Administration (NOAA)'s forecast of 3% colder winter weather, which points to higher demand for natural gas throughout the season.

5. What is the significance of natural gas storage?

Dena Wiggins: Natural gas storage is an essential part of the winter supply portfolio that enhances physical reliability and helps customers to manage their costs. Natural gas is purchased and injected into storage during the spring and summer when it typically costs less. This year, we started out the winter heating season with storage levels about 2% below the



five-year average, but still ample at 3,644 Bcf (EIA). The U.S. actually has the world's largest natural gas storage capacity, at just over four trillion cubic feet (Tcf) in underground facilities.

6. Does exporting America's natural gas as LNG raise prices here in the United States?

Charlie Riedl: There are multiple factors driving higher prices this winter, with higher demand caused by weather, storage, industrial demand and exports all contributing to market pressure. While the European energy crisis has created high demand for U.S. LNG, keep in mind that LNG exports represent only about 10% of the market.

Not only are LNG exports one of the smallest natural gas customer sectors, the volume of LNG exports is a fairly predictable number that increases very gradually, because of the limited number of U.S. LNG export facilities. LNG export terminals take 6-10 years from start to in-service, which gives the market plenty of time to prepare for the increased demand. This winter, NGSA is projecting only about a 1.2 Bcf/d increase in LNG exports.

LNG exports provide multiple benefits to domestic consumers, such as their key role in incentivizing production across the country and increasing household purchasing power.

Most importantly, U.S. LNG is necessary for our allies in Europe to replace Russian natural gas this winter, as well as to help all our trading partners get closer to their COP27 and Paris Accord climate goals.

**LNG EXPORTS INCREASE
U.S. HOUSEHOLD
PURCHASING POWER BY
OVER \$30 BILLION,
MEANING THE AMOUNT
OF GOODS AND SERVICES
THAT CONSUMERS CAN
BUY INCREASES.**



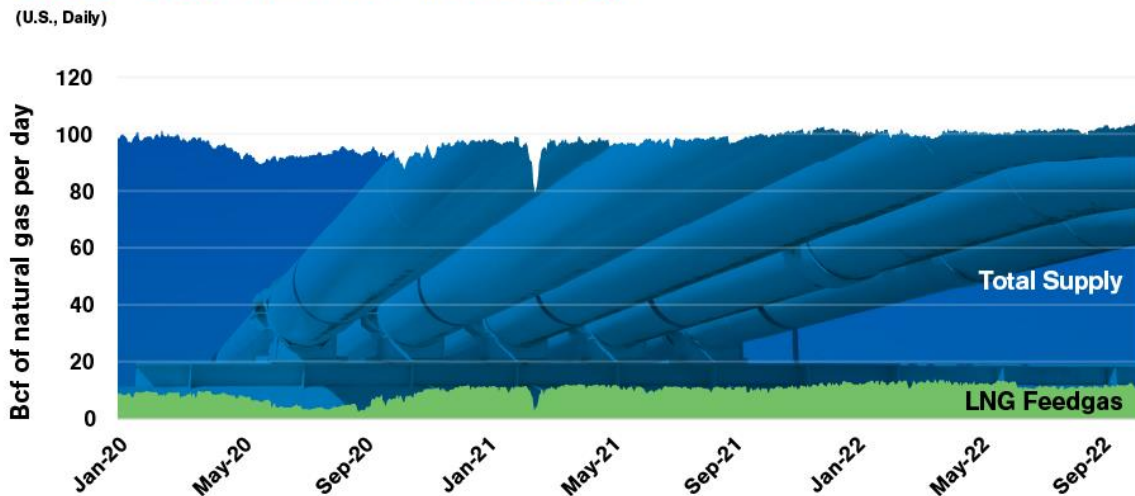


7. Are U.S. LNG exports growing too much for the market to handle?

Charlie Riedl: The U.S. natural gas market can comfortably absorb this winter's projected LNG export growth of about 1.2 Bcf/d. In fact, the natural gas market has weathered greater and less predictable winter-over-winter increases in customer demand without a material impact on prices.

To put these numbers in perspective, LNG exports represent a relatively small share of the daily supply of natural gas here in the U.S. And while our export volumes are literally just a drop in the bucket for the U.S. natural gas market, they are the key to keeping the power on for many in Europe. In fact, a single cargo of U.S. LNG can provide heat for approximately 1 million Europeans for one month this winter.

LNG EXPORTS ARE SMALL SHARE OF ENORMOUS DAILY NATURAL GAS SUPPLY IN THE U.S.





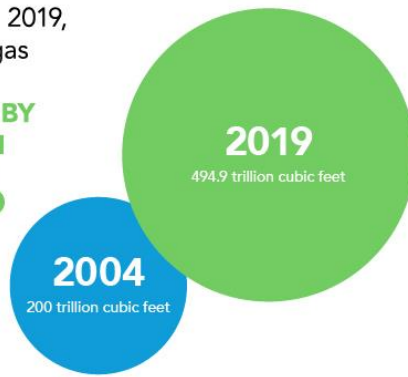
8. If LNG exports continue to grow in the future, will there be enough natural gas for domestic customers?

Dena Wiggins: There will be ample natural gas for all. The future supply of natural gas is abundant, and estimates are brightened with each successive assessment of the resource. In fact, current LNG exports represent less than 1% of U.S. proven reserves of natural gas and about 0.001% of the total estimated U.S. natural gas resource base (EIA, U.S. Potential Gas Committee).

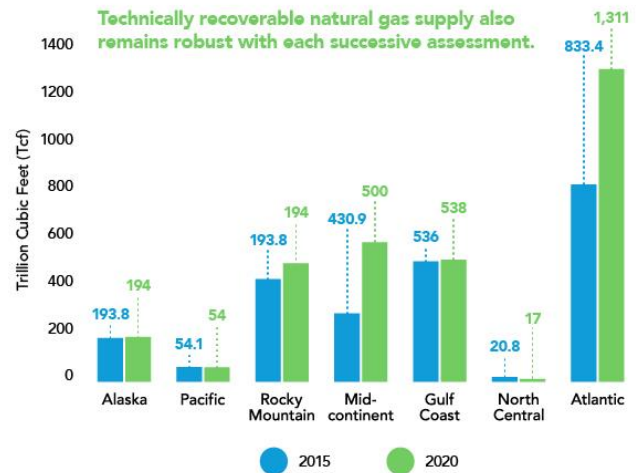
BUILDING RESERVES, GROWING SUPPLY

U.S. proved reserves of natural gas are enormous – but that’s just one part of a future supply that keeps growing.

From 2004 to 2019, total natural gas reserves have **INCREASED BY MORE THAN 148%**



<https://www.eia.gov/naturalgas/crudeoilreserves/>
<http://potentialgas.org/press-release>
<http://potentialgas.org/wp-content/uploads/2016/10/pgc-press-release-april-2015-slides.pdf>



9. Would limiting LNG exports benefit consumers?

Charlie Riedl: It would be a tremendous mistake. Not only would restricting LNG exports fail to benefit U.S. customers here at home this winter, but it would also put our European allies in a perilous position. It would throw domestic and global markets into an uproar, causing serious damage to U.S. credibility as a climate leader.

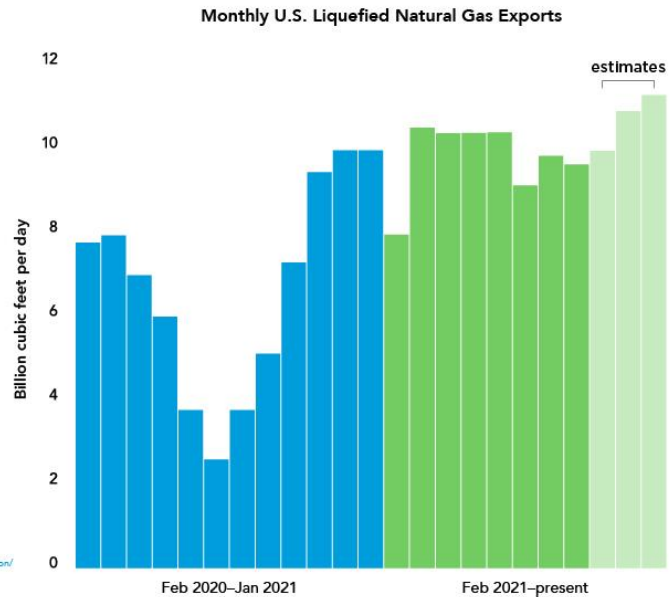


In addition, LNG exports indirectly benefit the U.S. manufacturing sector that relies on natural gas and the natural gas liquids that are associated with production. Putting a limit on exports would backfire by discouraging natural gas production which, in turn, penalizes U.S. manufacturers and leads to higher prices for consumers.

RECORD AMOUNTS OF U.S. LNG EXPORTS HAVE HELPED POWER HOSPITALS, HOMES AND BUSINESSES AROUND THE WORLD – ALL WHILE KEEPING EMISSIONS BELOW 2019’S RECORD HIGHS.

BY CONTINUING EXPORTS, OUR TRADING PARTNERS WILL HAVE ACCESS TO MORE **CLEAN AND RELIABLE U.S. LNG THAN EVER BEFORE.**

<https://www.eia.gov/todayinenergy/detail.php?id=46296>
https://www.eia.gov/naturalgas/weekly/archiveweb/ngww/2021/01_07/
<https://www.naturalgasintel.com/natural-gas-prices-projected-to-jump-in-2021-on-strong-export-demand-moderate-production/>
<https://www.eia.gov/naturalgas/monthly/>
<https://www.nytimes.com/2021/11/03/climate/carbon-dioxide-emissions-global-warming.html>



10. Why are natural gas prices so different among U.S. regions?

Dena Wiggins: Since the early 2000s, the average price of natural gas decreased significantly across the U.S. due to the shale revolution. Although higher natural gas prices are projected this winter, prices are still lower than they were [15 years ago](#).

However, during periods of cold weather and high demand in the Northeast, prices in the Northeast’s daily spot/cash market often increase more sharply than other regions because of a lack of available pipeline capacity compared to other regions. Investment in new infrastructure is needed to deliver more natural gas to customers, like utilities in the Northeast. Unfortunately, billions of cubic feet per day of pipeline capacity in the Northeast have been cancelled or delayed since 2018. While the Northeast has had limited new infrastructure, other parts of the country, such as the Permian basin in Texas and New Mexico, have seen close to 9 Bcf/d in additions.

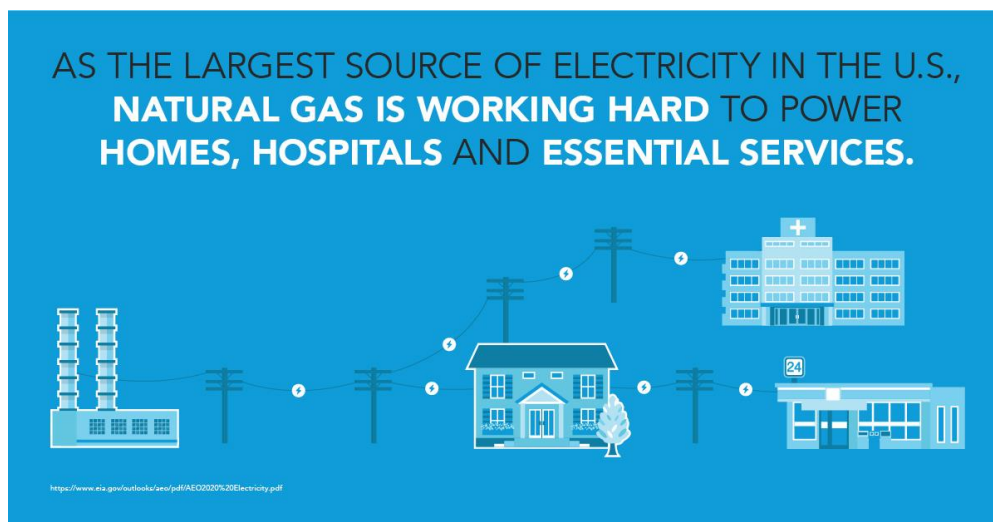


11. What is the difference between “spot” prices, “wellhead” prices and other kinds of natural gas prices?

Dena Wiggins: Wellhead prices and citygate prices refer to the price paid at a physical point of sale. There are many different ways to purchase natural gas, including buying on “spot” (also called “cash” or daily) prices, futures prices, and short- and long-term contract prices, which all refer to the expected term of delivery of the natural gas. Ideally, customers try to diversify their natural gas supply portfolios with a mix of gas from different supply regions acquired under different circumstances, including spot market gas and short- and longer-term contract gas, supplemented by gas from storage and peaking arrangements. This limits their exposure to daily swings in demand that can occur.

12. What is the difference between “interruptible” and “firm” transportation?

Dena Wiggins: Businesses that are willing to have their natural gas supply interrupted, or that can significantly reduce their consumption when notified by the provider, can get better rates for natural gas transportation. This is called “interruptible” service. An interruptible customer is typically a large industrial or commercial customer with the ability to use other fuels or temporarily halt operations. In some regions, even power generators choose to have interruptible transportation service for natural gas, despite the risks. In contrast, firm customers contract for a steady natural gas transportation service.





13. Is COVID-19 still a factor?

Dena Wiggins: The pandemic is still a factor in the sense that it created worldwide disruptions to business markets, supply and demand that have taken a few years to level out. As in many industries, labor markets and wait times for equipment and crews are longer today than pre-COVID, but that situation continues to improve. The U.S. natural gas market has displayed strength and resilience through all of this.

14. How can customers protect themselves against higher prices?

Dena Wiggins: Many times, people see higher prices mentioned in the news, but often those prices represent spot or cash prices. These are prices that are short-lived, very regional and do not represent the market as a whole. One thing to point out about prices this winter, or any season, is that there are a variety of ways that customers like utilities and industrial consumers can buy their natural gas. The interconnected nature of the U.S. natural gas market allows utilities and industrial customers to secure a mix of natural gas supply from different regions, using tailored contract terms and storage to limit their exposure to swings in demand. They can further diversify their natural gas supply portfolios by buying natural gas under different terms and different lengths, from the daily spot market to longer terms of a month or more.

Sources: U.S. Energy Information Administration *Winter Fuels Forecast*, updated October 2022 (“EIA”); Natural Gas Supply Association *2022-2023 Winter Outlook for Natural Gas*, updated Nov. 2022; NOAA *feature article “U.S. sweltered through 3rd hottest summer on record*, Sept. 9, 2022 ; EIA *Weekly Natural Gas Storage Report*, U.S. Energy Information Administration *Historical Henry Hub Natural Gas Spot Prices*, <https://www.eia.gov/dnav/ng/hist/ngwhhdm.htm>; National Weather Service Climate Prediction Center *Three-Month Outlook Official Forecasts*, Oct. 2022, ; EIA *U.S. Crude Oil and Natural Gas Proved Reserves, Dec. 2021*; Platts *Gas Daily Market Fundamentals*, Dec. 6, 2022; ICF International, *Impact of LNG Exports on the U.S. Economy: A Brief Update*, 2017; NERA, *Macroeconomic Outcomes of Market Determined Levels of U.S. LNG Exports, 2018*; Energy Ventures Analysis, *EVA Winter Outlook for Natural Gas Executive Summary*, Oct. 2022; Potential Gas Committee, *Potential Supply of Natural Gas in the United States Biennial Report*, Dec. 31, 2020; U.S. Energy Information Administration, *Today in Energy*, Dec. 9, 2022