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NATURAL GAS INTELLIGENCE

*News | Data | Prices | Insight... since 1981*

# Natural Gas Winter Outlook:

*Will Domestic, Global Influences Drive Even  
Higher Prices & Volatility?*

Presented by Leticia Gonzales  
Price & Markets Editor  
Natural Gas Intelligence

LDC Gas Forums Mid-Continent  
September 12, 2022

# Our Mission & Thought Leaders

Natural Gas Intelligence serves as a trusted information source in the North American natural gas market, helping businesses across the value chain understand market fundamentals, news events and price discovery to aid in their business decisions.

We leverage a deep roster of thought leaders across the US, Canada and Mexico and collaborate with our clients to provide an array of business intelligence products and services to the global energy marketplace.



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# Natural Gas Intelligence

40 YEARS OF MARKET PRICE TRANSPARENCY

- **Established in 1981**
- **Debuted the industry's first** natural gas wellhead price table in 1983
- **Weekly & Bidweek Gas Price Indexes** launched in 1988
- **Daily Gas Price Index** launched in 1993
- **Shale Daily** launched in 2010
- Began including **ICE** data in our indexes (2008)
- Debuted **NGI's Forward Look** in 2012
- **Mexico Gas Price Index** launched in 2017
- **LNG Insight** launched in 2019
- **Mensual en español: GPI de México – Edición de los Consumidores** (2020)

- **Forward Curves**  
at 70 Hubs out 10 years
- **Daily Indexes**  
at 170 Hubs
- **Weekly Averages**  
at 170+ Hubs
- **Bidweek Indexes**  
at 150+ Hubs
- **Preliminary Spot Prices**  
at 160+ Hubs
- **Mexico Gas Prices**  
at 40+ Hubs + Flow Data

## Bidweek Data

First-of-Month natural gas price indexes for 150 locations in North America

## Forward Look Data

Monthly forward curves out 10 years (updated daily) at 70 key natural gas hubs

## Daily Data

Natural gas spot price indexes for 170+ locations in North America

## Mexico NatGas Price & Flow Data

Mexico's trusted and transparent natural gas pricing and pipeline flow data

## Weekly Data

Weekly averages of spot natural gas price indexes for 170+ locations in North America

## Daily Preliminary Prices

Indicative natural gas price data service based on actual trade data

## LNG Data

Key LNG data across the globe that may influence demand for North American natural gas exports

## Bidweek Preliminary Prices

Indicative natural gas bidweek pricing delivered each of the last three days of the month based on actual trade data

# Agenda

Henry Hub – A Review of Key Fundamentals Driving Natural Gas Pricing & Volatility

What Do the Forward Curves Tell Us About What We Can Expect This Winter?

What Are the Biggest Risks That Could Derail Price Projections?

How is the Midwest Faring Ahead of the Peak Winter Season?

Gas Flows Interrupted –Pipeline Maintenance Impacts in Western Canada, Beyond

# Henry Hub – How Did We Get Here?

- **Supply**

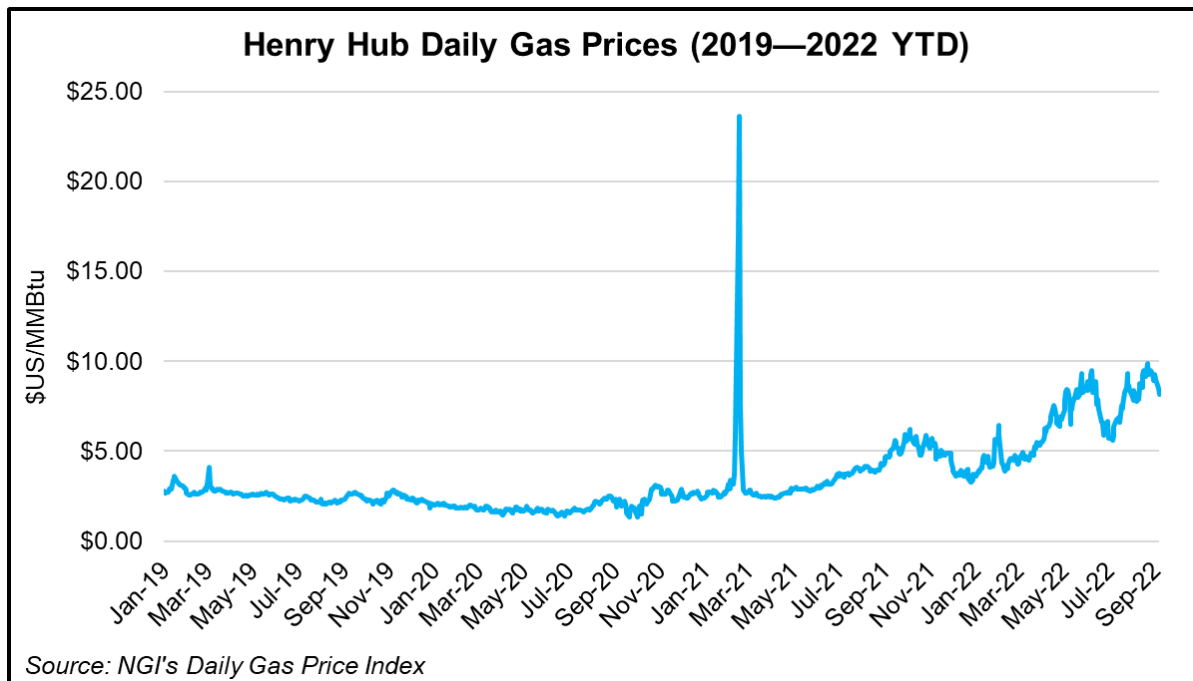
- U.S. production
- Canadian imports

- **Demand**

- Residential/commercial
- Power generation
- Industrial
- Exports

- **Headlines**

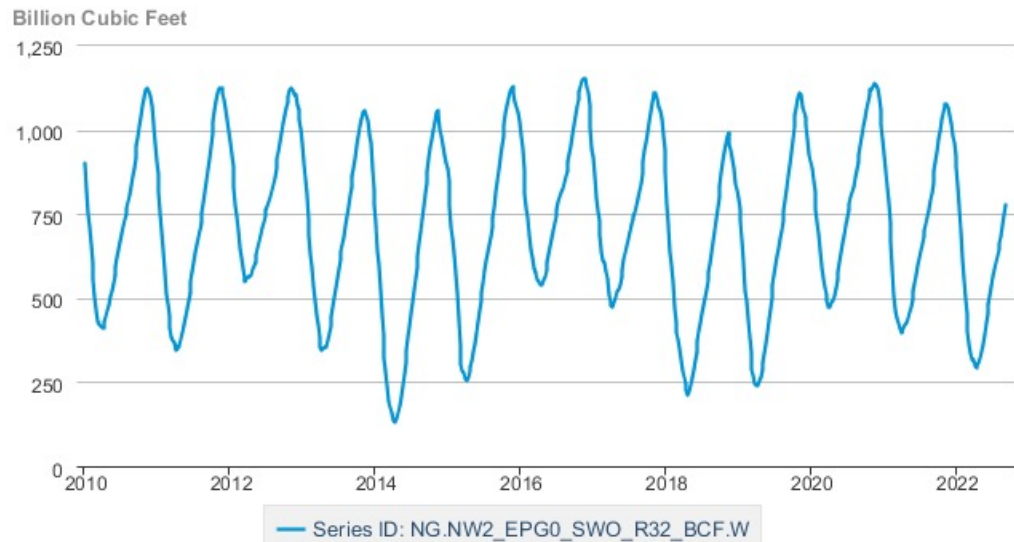
- Freeport!





# Storage Inventories Struggling So Far This Injection Season

## Weekly Midwest Region Natural Gas Working Underground Storage, Weekly



Source: U.S. Energy Information Administration

### Weekly EIA Lower 48 U.S. Working Gas in Storage

Reported Statistics From the EIA for the Week Ending 2022-09-02

	This Week (Bcf)	Prior Week (Bcf)	Change (Bcf)	Year Ago (Bcf)	5-Year Avg. (Bcf)
East	635	614	21	699	735
Midwest	776	747	29	838	843
Mountain	159	157	2	191	191
Pacific	238	241	-3	243	274
South Central	887	881	6	944	1,001
<b>Total Lower 48</b>	<b>2,694</b>	<b>2,640</b>	<b>54</b>	<b>2,916</b>	<b>3,043</b>

#### Actual vs. Weekly Storage Estimate

Range of Injection/Withdrawal Estimates: 47 to 66

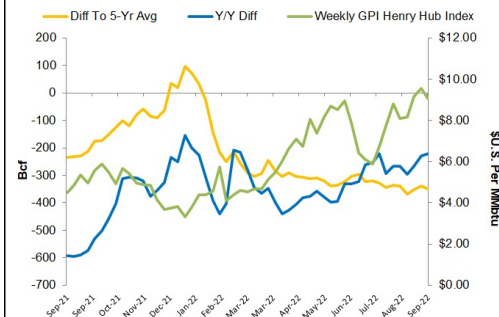
Actual Injection/Withdrawal: 54

Year Ago Injection/Withdrawal: 48



#### Relationship of Storage Levels to NGI's Weekly Henry Hub Spot Market Price

Current Storage (Bcf):	<b>2,694</b>	Previous 5-Yr Avg. Storage (Bcf):	<b>3,043</b>
Last Year Storage (Bcf):	<b>2,916</b>	Difference to 5-Yr Average (Bcf):	<b>-349</b>
Diff. to Last Year (Bcf):	<b>-222</b>	NGI's Weekly Henry Hub Index	<b>\$9.060</b>



**How to Interpret This Table:** The data in the Reported Statistics From the EIA section are released by the U.S. Energy Information Administration each Thursday at 10:30 Eastern For more information on the EIA's methodology, please refer to [www.eia.gov](http://www.eia.gov). Actual vs. Weekly Storage estimates shows the actual reported weekly EIA injection/withdrawal figure versus the range of estimates from market analysts surveyed by NGI. The blue line in the graph shows the difference between current working gas in storage vs. the amount at this time last year, while the yellow line represents the current working storage gas level compared to its average from the comparable period over the previous 5 years, as calculated by the EIA. The green line is the Henry Hub spot market price that appears in NGI's Weekly Gas Price Index.

Source: Compiled by NGI's Daily Gas Price Index from EIA & NGI's Weekly Gas Price Index data



**Where Do We Go From Here?**

# Henry Hub Forward Curve

*Prices as of Sept. 8*

Oct. 2022 - \$7.915

Nov. 2022 - \$7.971

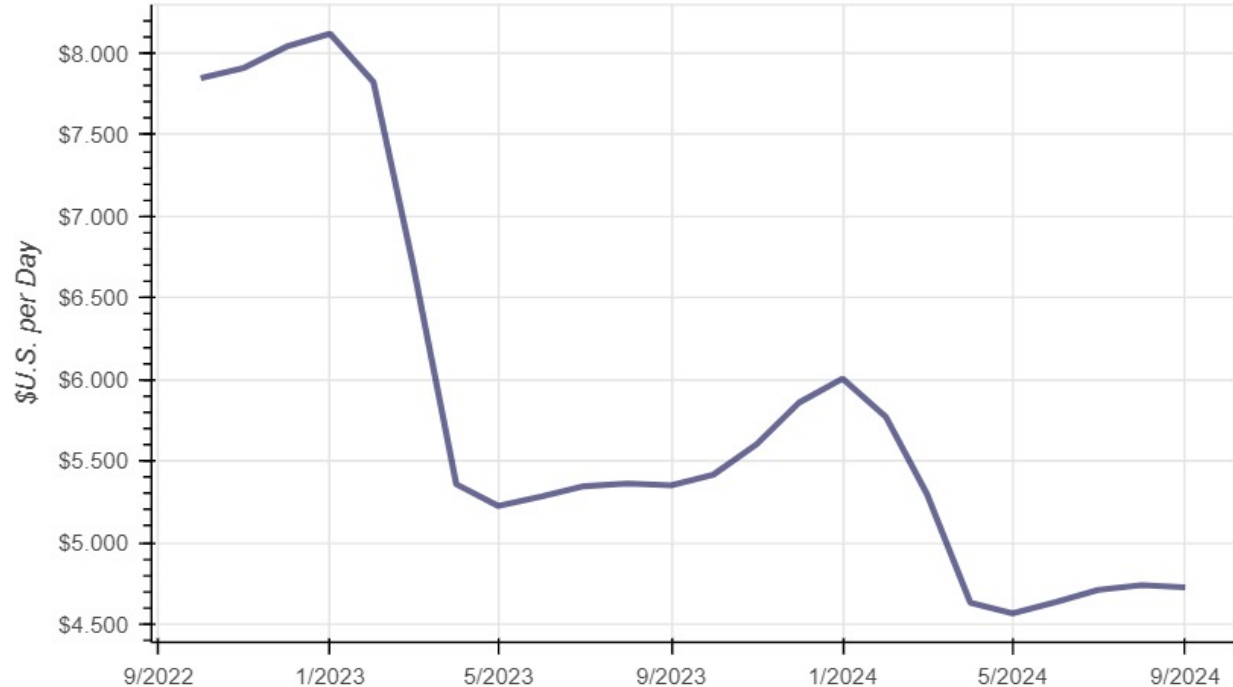
Dec. 2022 - \$8.102

Jan. 2023 - \$8.196

Feb. 2023 - \$7.910

Mar. 2023 - \$6.873

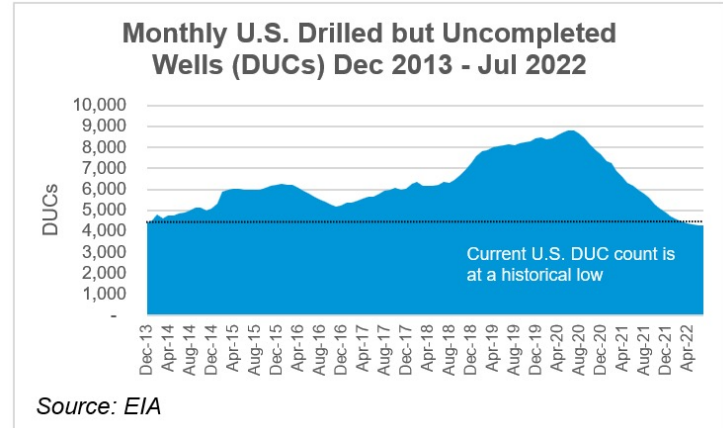
**NGI's Henry Hub Forward Fixed Price Curve**



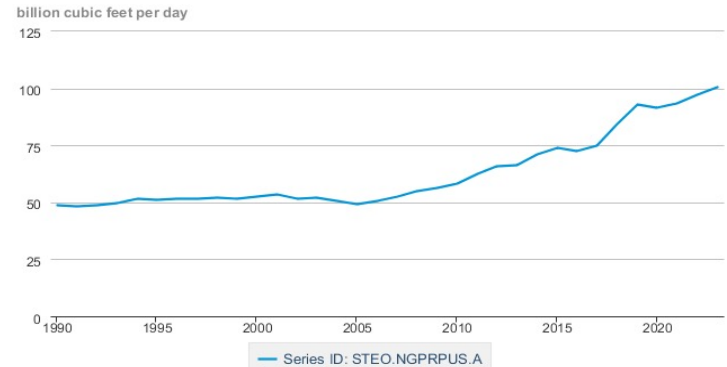


# Production

- Central banks increased interest rates in 2Q, but think S/D still support a multi-year up cycle. O&G remains tight
- OFS customer conversations already have pivoted to 2023, well ahead of normal, showing equipment capacity for next year is tight
- Saw increase in U.S. activity from both privates AND publics in 2Q22
- Downplayed/dismissed talk about what a recession could do
- Williams, Kinder Morgan, Enterprise Products and Targa among major midstreamers seeing natural gas volumes on their systems in response to higher commodity prices



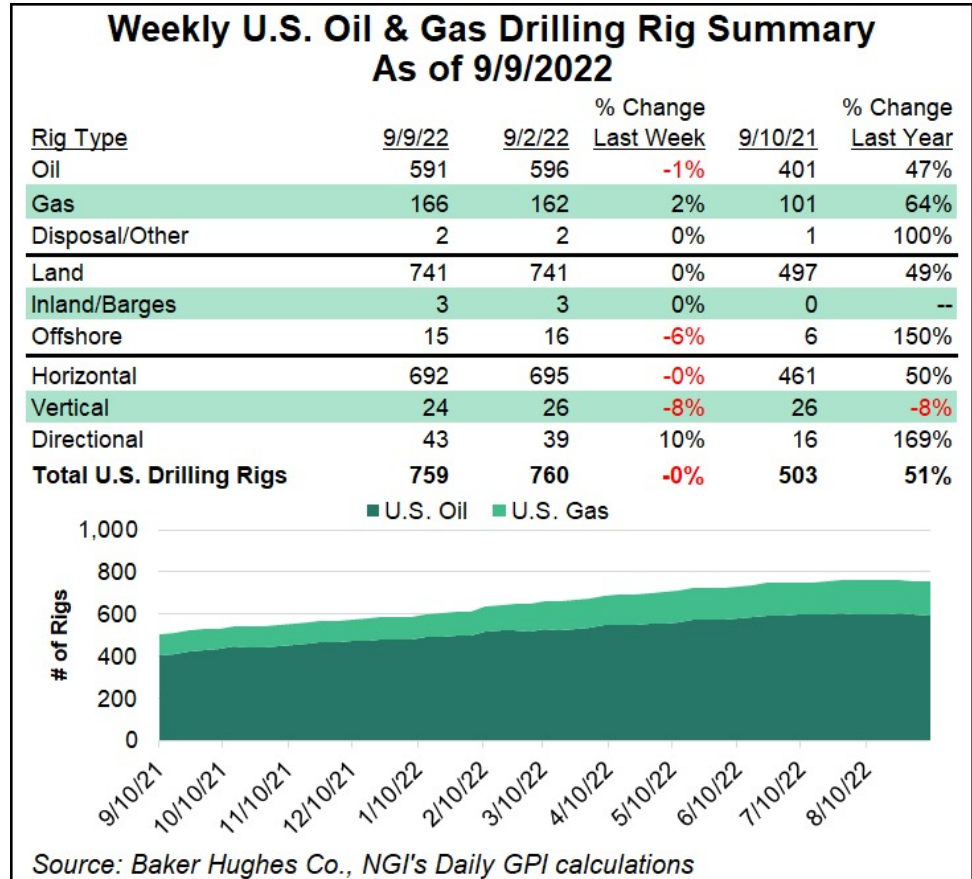
**Natural Gas Total Dry Production, Annual**



Source: U.S. Energy Information Administration

# Production cont.

- The U.S. rig count will continue to increase, but at a slower pace
- Looking at 10%-15% inflation for 2023. Some estimates are as high as 30% in 2023
- Given strong market fundamentals today, not much expected to change if the U.S. enters a recession
- Per one analyst, one of the greatest debates in the U.S. right now is where we are in terms of the productivity of U.S. shale and whether U.S. unconventional production is maturing, at which point the country moves more to a maintenance mode vs. growth
- Midstream customers are reacting favorably to IRA, as it opens up more federal leases



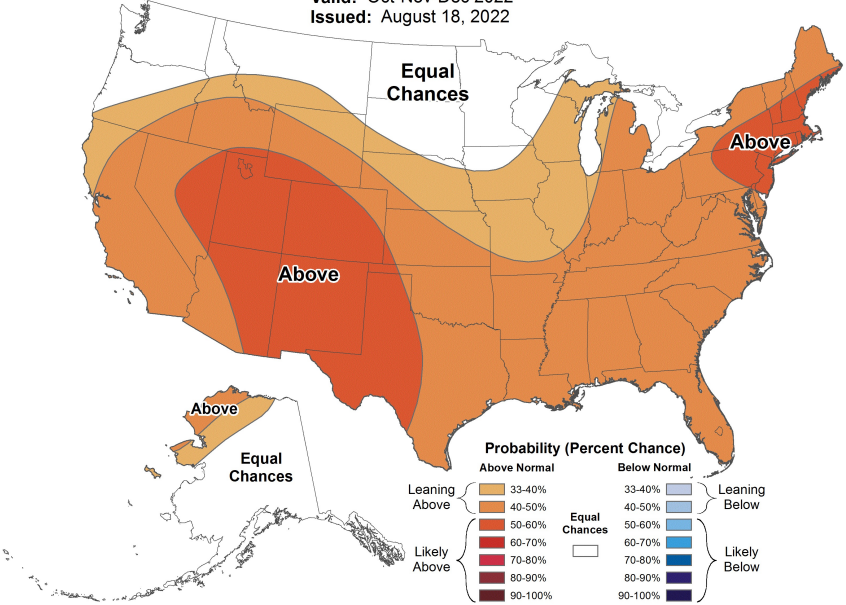
# Winter is Coming ... Or Is It?



## Seasonal Temperature Outlook



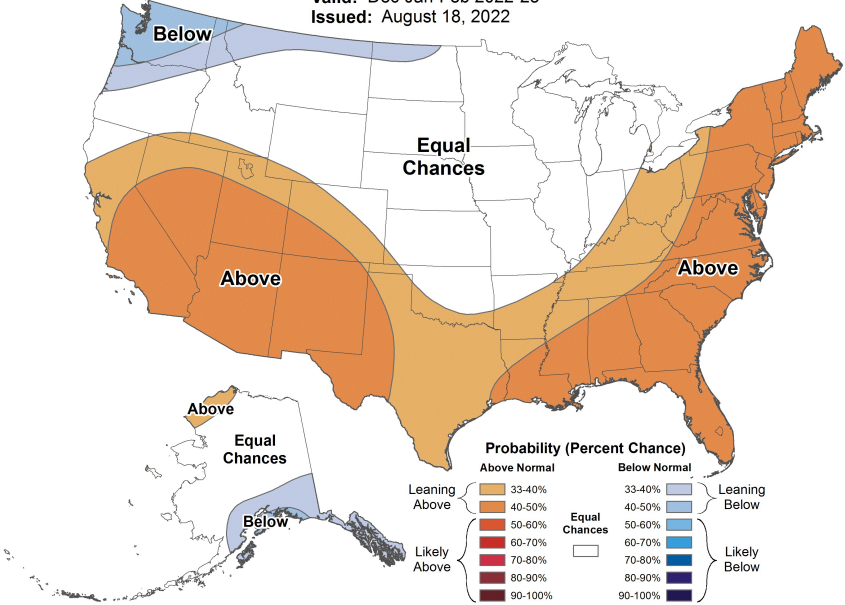
Valid: Oct-Nov-Dec 2022  
 Issued: August 18, 2022



## Seasonal Temperature Outlook



Valid: Dec-Jan-Feb 2022-23  
 Issued: August 18, 2022



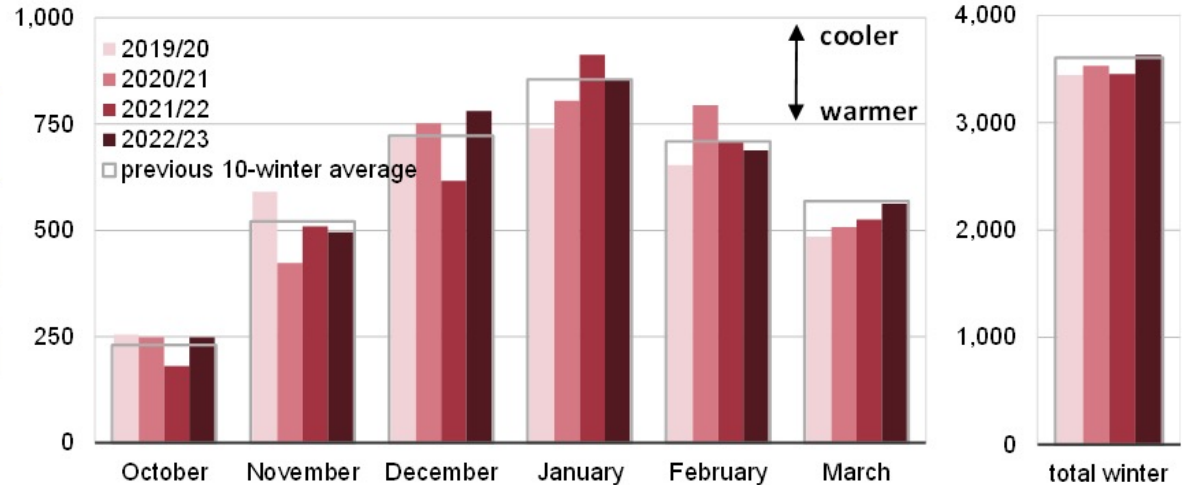


# But a Little Cold Can Wreak Havoc on Storage

## Look what happened last winter!

Week Ended	Gas in Storage (Bcf)	Weekly Change (Bcf)	Y/Y Diff	Diff to 5-Yr Avg
Jan 14	2,810	-206	-226	33
Jan 21	2,591	-219	-308	-25
Jan 28	2,323	-268	-393	-143
Feb 4	2,101	-222	-441	-215

U.S. winter heating degree days  
population-weighted



Note: EIA calculations based on National Oceanic and Atmospheric Administration (NOAA) data. Projections reflect NOAA's 14-16 month outlook.

Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022



# LNG Exports to Recover Once Freeport Returns

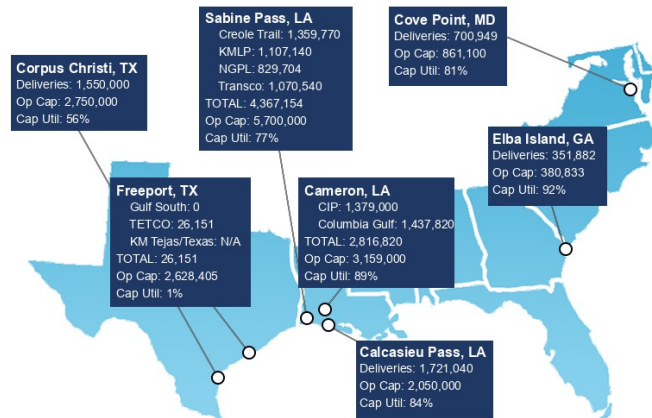
## NGI's LNG INSIGHT U.S. LNG EXPORT TRACKER 08-Sep-2022

### Global LNG & NatGas Futures Prices (Oct 2022) 8-Sep-2022

Contract	Cur/Unit	Settle	Chg	% Chg	Settle (\$US/MMBtu)
JPN/KOR	\$US/MMBtu	\$52.835	-\$2.365	-4.3%	\$52.835
NBP	pence/therm	410.91p	6.85p	1.7%	\$47.283
TTF	Eur/MWh	€ 220.541	€ 6.658	3.1%	\$64.734
Henry Hub	\$US/MMBtu	\$7.915	\$0.073	0.9%	\$7.915

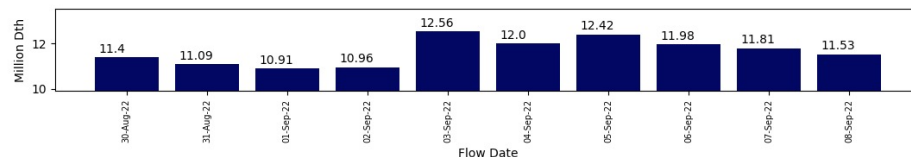
NBP & TTF converted to \$US/MMBtu using same month forex futures contracts.

Source: NGI calculations, CSI



### Daily Summary (Volumes Listed in Dekatherms)

Total Deliveries to U.S. LNG Export Facilities:	11,533,996
Previous Day:	11,808,481
Change:	-274,485



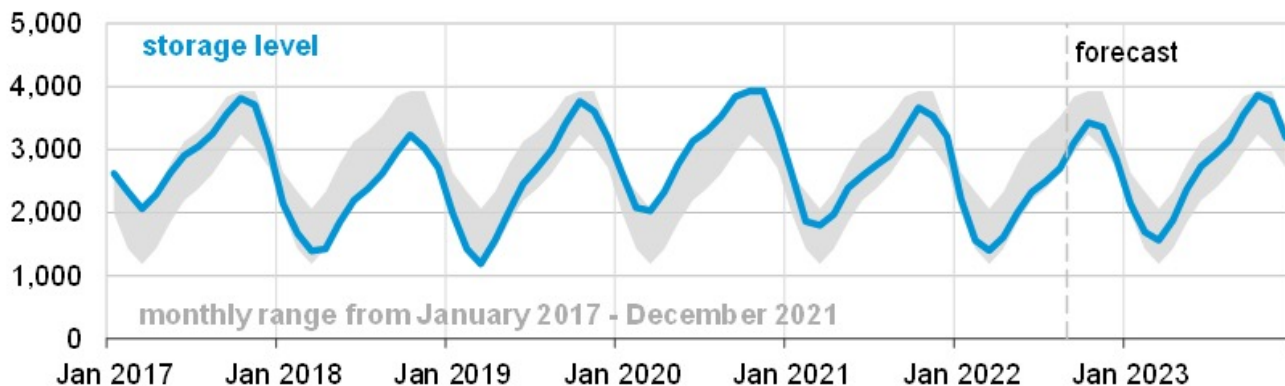
Note: Figures are NGI's estimates of gas delivered to each respective LNG liquefaction facility, listed in dekatherms, and based on best available cycle as of the morning of each listed gas day.

Source: Pipeline EBBs, NGI calculations

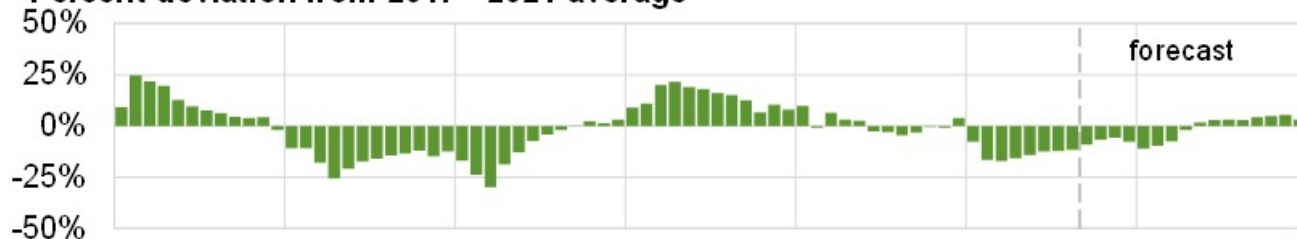
# Where Will Storage Sit at End of March?

## U.S. working natural gas in storage

billion cubic feet



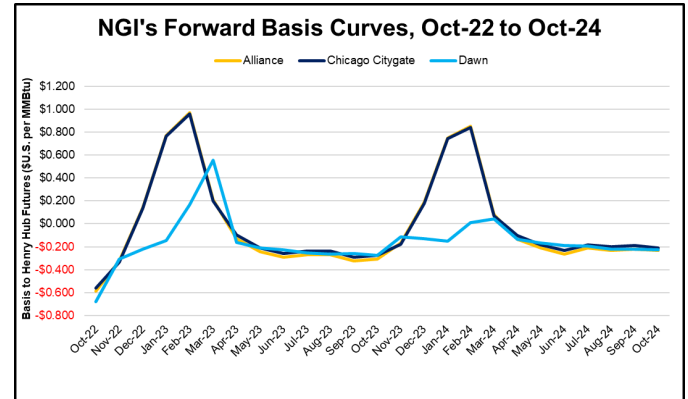
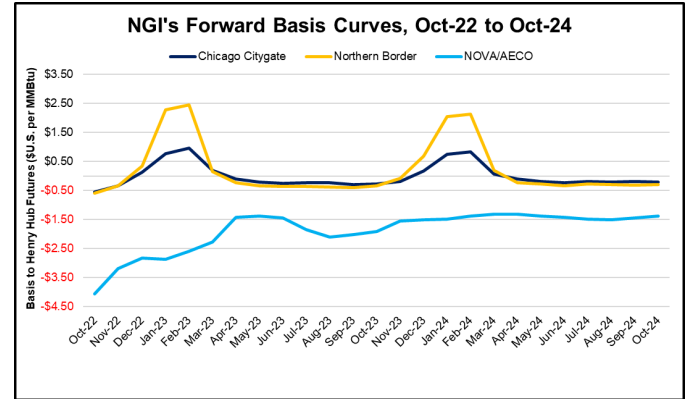
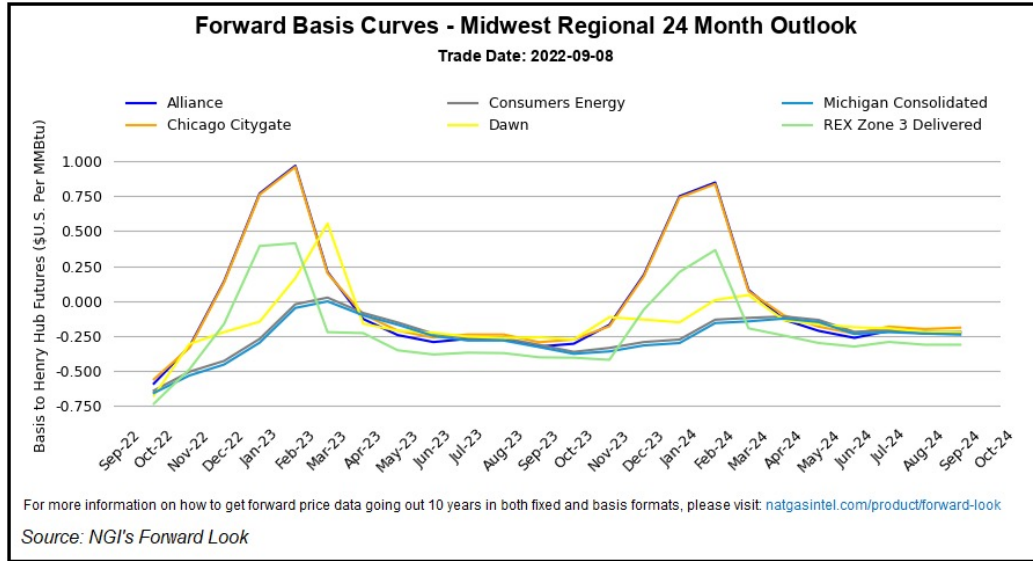
## Percent deviation from 2017 - 2021 average



Source: U.S. Energy Information Administration, Short-Term Energy Outlook, September 2022

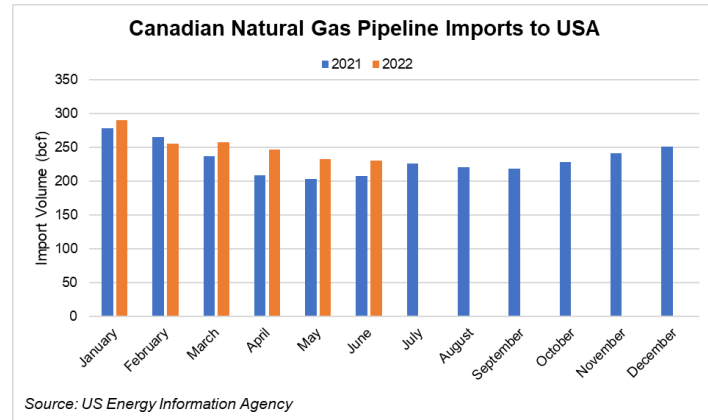
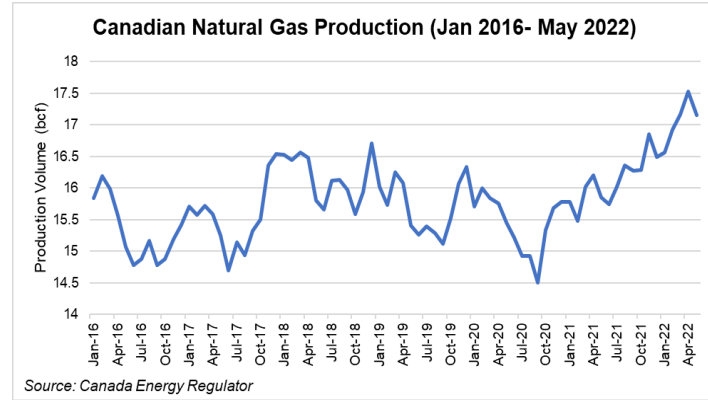
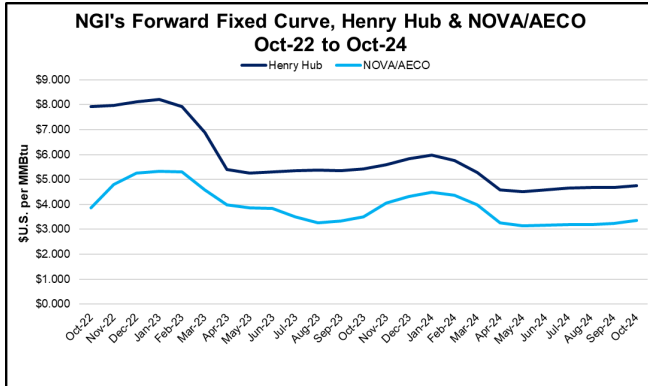
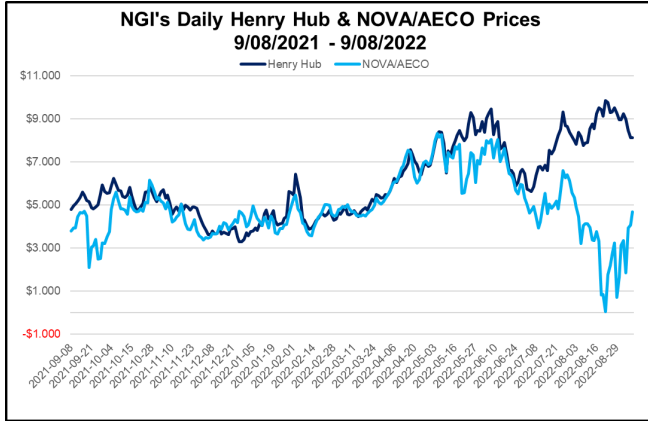


# Regional Relationships





# Spotlight on Canada



# NGI is Using Technology to Plan for the Future

Thank You!



For any questions on today's presentation or for more information on the data contained herein, please contact Leticia Gonzales at 713.502.7085 or [Leticia.gonzales@naturalgasintel.com](mailto:Leticia.gonzales@naturalgasintel.com)

