Natural Gas Supply Association

2023-2024 WINTER OUTLOOK

MARKETS MATTER

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Understanding the Symbols

^	Upward market pressure
—	Flat market pressure
v	Downward market pressure

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2022-2023 Winter Outlook: Outline

LOOKING AHEAD TO WINTER 2023-2024

Market Pressure Points

Production/Supply | Weather | Economy | Demand | Storage

Wild Card Factors

Winter Expectations

SUMMARY

Supply: Winter Production Projected Similar to Last Winter

Winter 2023-2024 Supply Forecast: 107.4 Bcf/d

Previous 3-year average: 101.7 Bcf/d Last winter's average 106.7 Bcf/d

	Dry Production			Net Canadian Imports			LNG Imports	
3Yr Avg	96.2			5.5			0.1	
2022-2023 Actual	101.3			5.3			0.1	
2023-2024 Projected	**101.7**			**5.7**			**0.1**	

Winter-to-winter pressure on natural gas prices

Data Source: Energy Ventures Analysis, Inc.

Natural Gas Production: Rigs and DUCs Indicate Slower Growth on the Horizon

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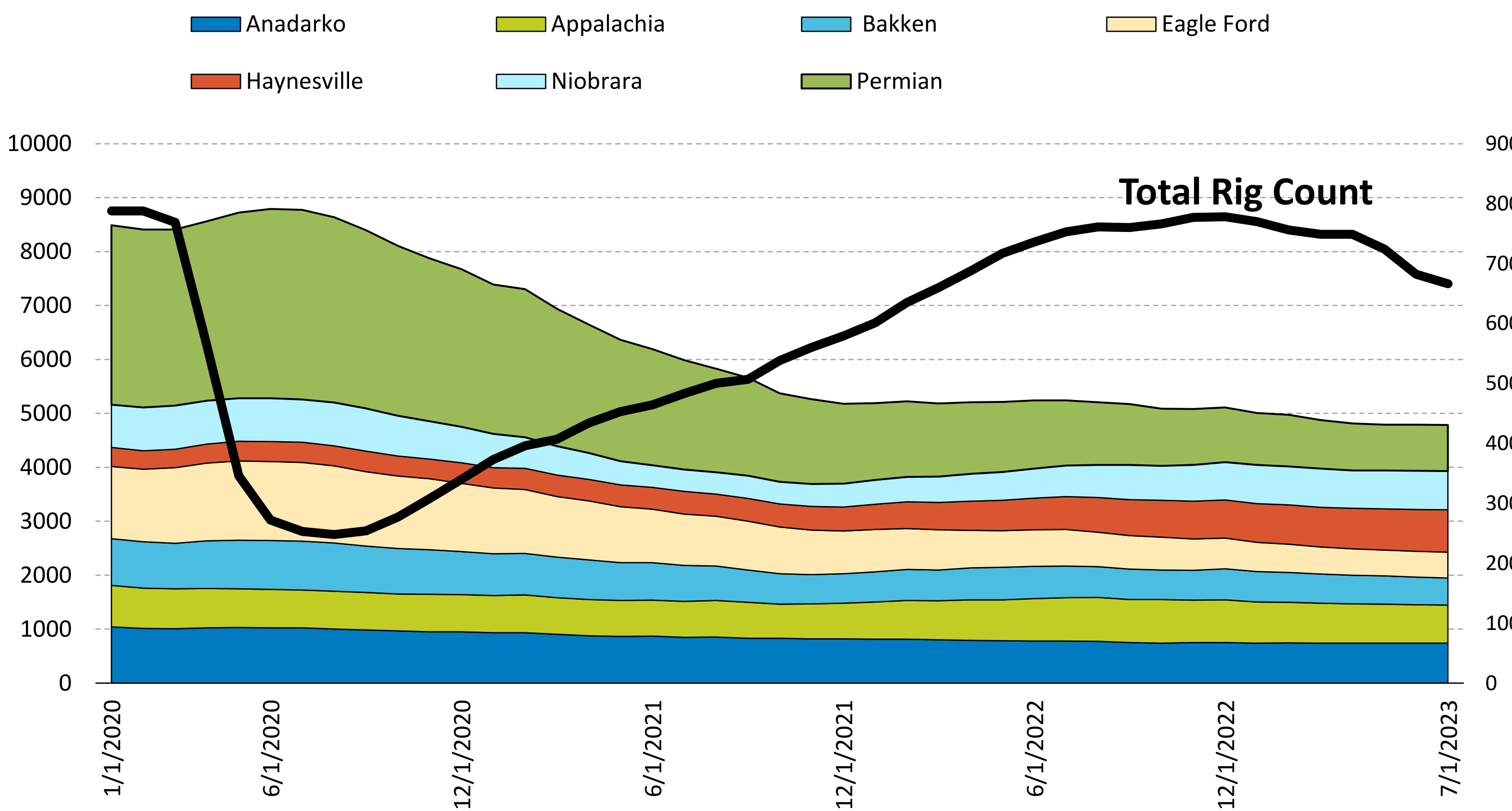

Inventory of Drilled Uncompleted Wells (DUCs) and Natural Gas-directed Rigs, 2020-August 2023

Data: Energy Ventures Analysis, BakerHughes

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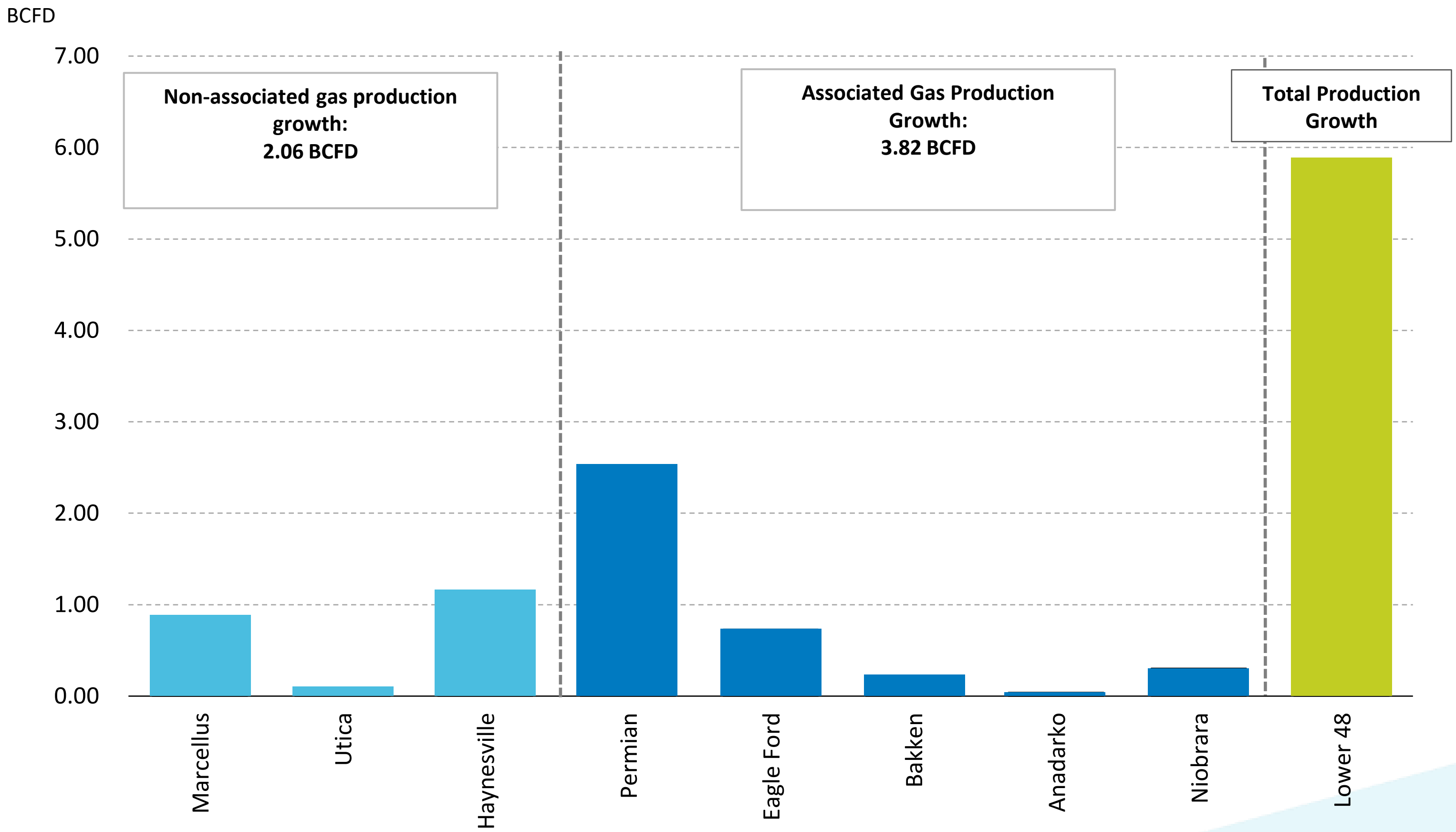
Snapshot of Recent Production: Associated Gas Leads Growth But Production Remains Diverse

Year-over-year Production Change by Basin (Summer 2023 vs Summer 2022)



Source: EIA, Energy Ventures Analysis

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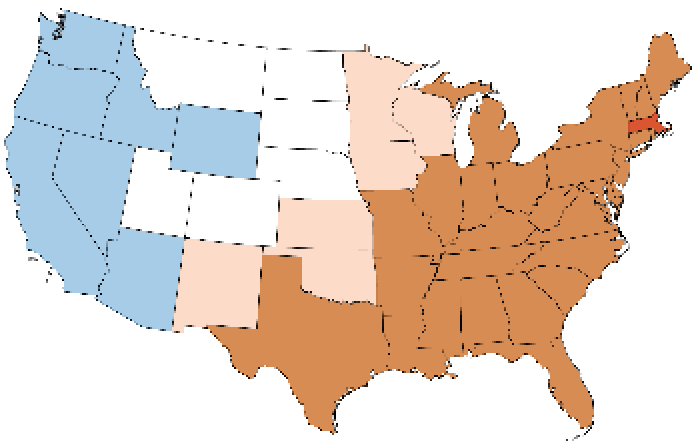
Demand: Winter Heating Season (November-March Weather)

Last Winter
2022-2023 ACTUAL

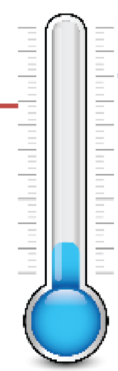
ACTUAL: 3,359 Heating degree days

Very similar to previous 3 winters



Record Warmest
Warmer Than Normal
Above Average
Below Average

3,359 HDDs
Actual Winter
2022-2023

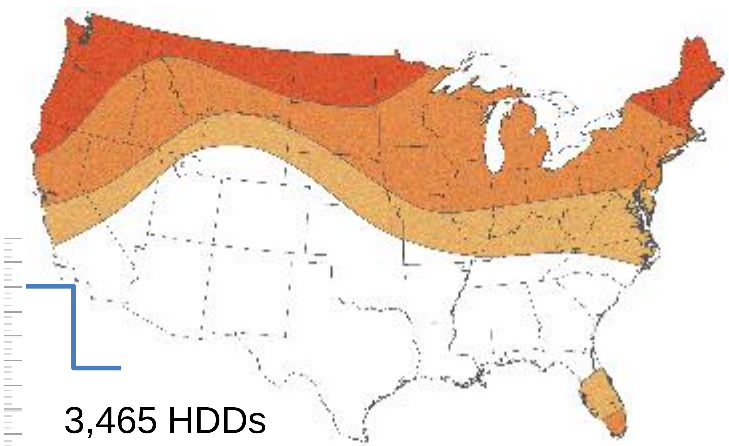


This Winter
2023-2024 FORECAST

Forecast: 3,465 Heating degree days

3% *colder* than last winter

3% *colder* than last three winters



3,465 HDDs
Forecast
Winter
2023-2024

Winter-to-winter pressure on natural gas prices

Data Source: Energy Ventures Analysis.

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Demand: Economy

Winter Season Period-to-period change	Last Winter 2022-2023 ACTUAL	This Winter 2023-2024 FORECAST
GDP Growth	2.0%	1.3%
Manufacturing	79.3%	79.1%
Unemployment rate	3.6%	3.6%
CPI (annual)	5.0%	3.8%
Consumer Confidence	69%	59%

Winter-to-winter pressure on natural gas prices

Data Sources: Moody's Analytics, Bureau of Labor Statistics, Bureau of Economic Analysis, University of Michigan, Energy Ventures Analysis

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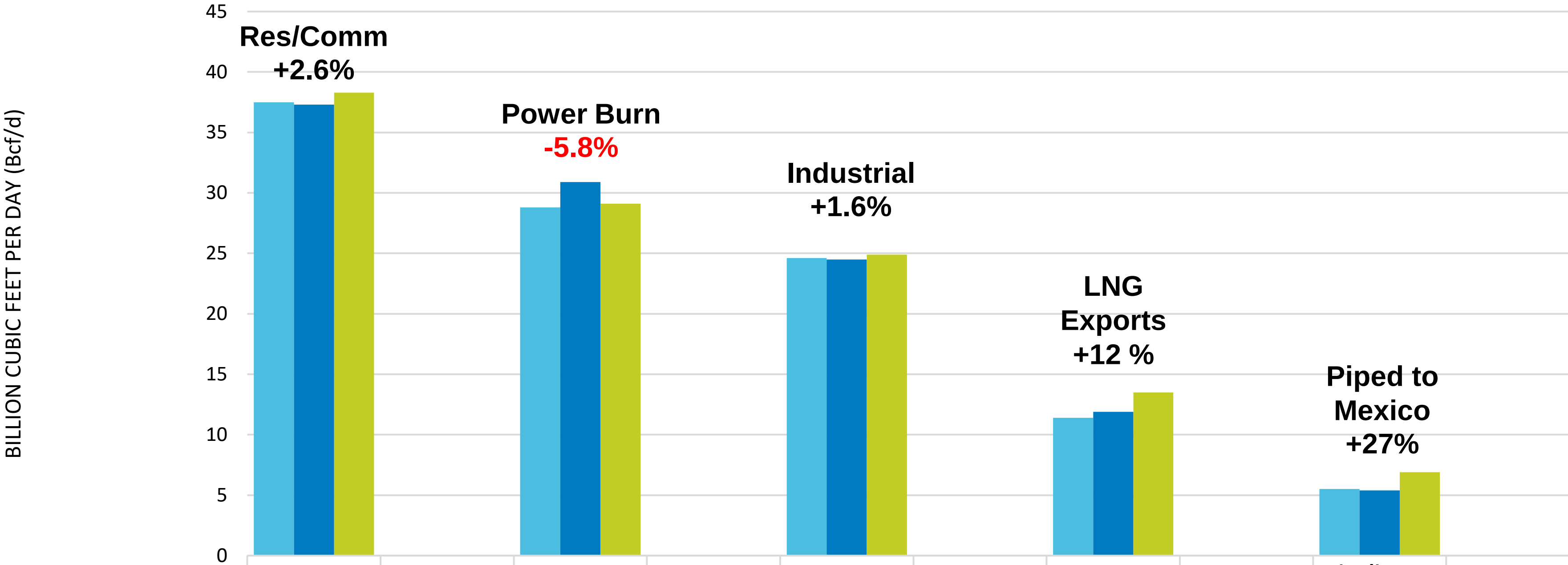
Demand: Demand Projected 2.7% Higher Than Last Winter

Winter 2023-2024: Forecast 121.4 Bcf/d

Previous 3-year average: 115.6 Bcf/d   Last winter's average: 118.3 Bcf/d



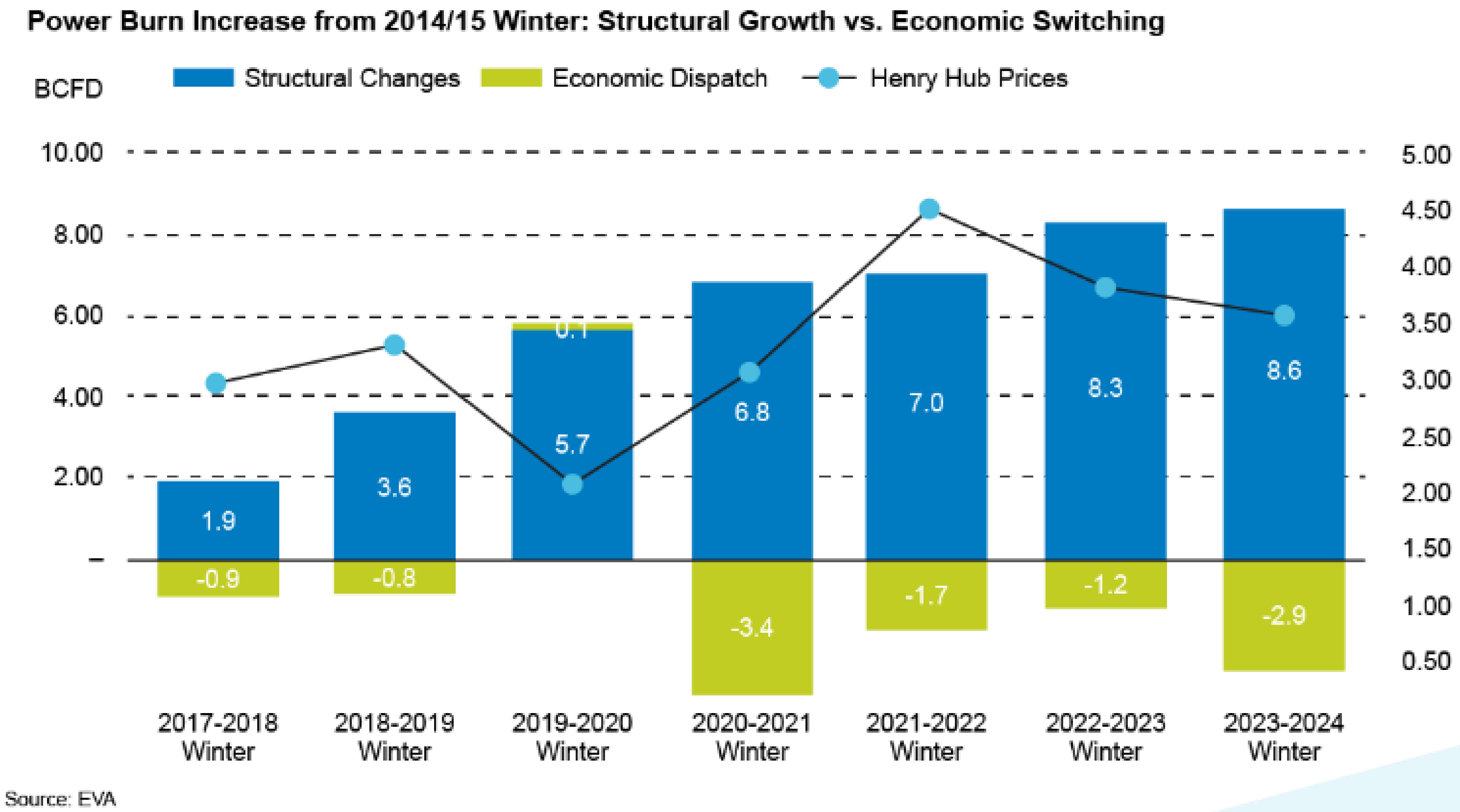
	Res/Comm	Power Burn	Industrial	LNG Exports	Pipeline to Mexico
3yr avg	37.5	28.8	24.6	11.4	5.5
Winter 22-23 Actual	37.3	30.9	24.5	11.9	5.4
Winter 23-24 Forecast	**38.3**	**29.1**	**24.9**	**13.4**	**6.9**

Winter-to-winter pressure on natural gas prices

Data Source: Energy Ventures Analysis, Inc.

Power Burn Growth: Structural Growth vs. Economic Switching

Structural growth = New gas-fired generation
Economic switching= Use of existing generation due to price compared to other fuels



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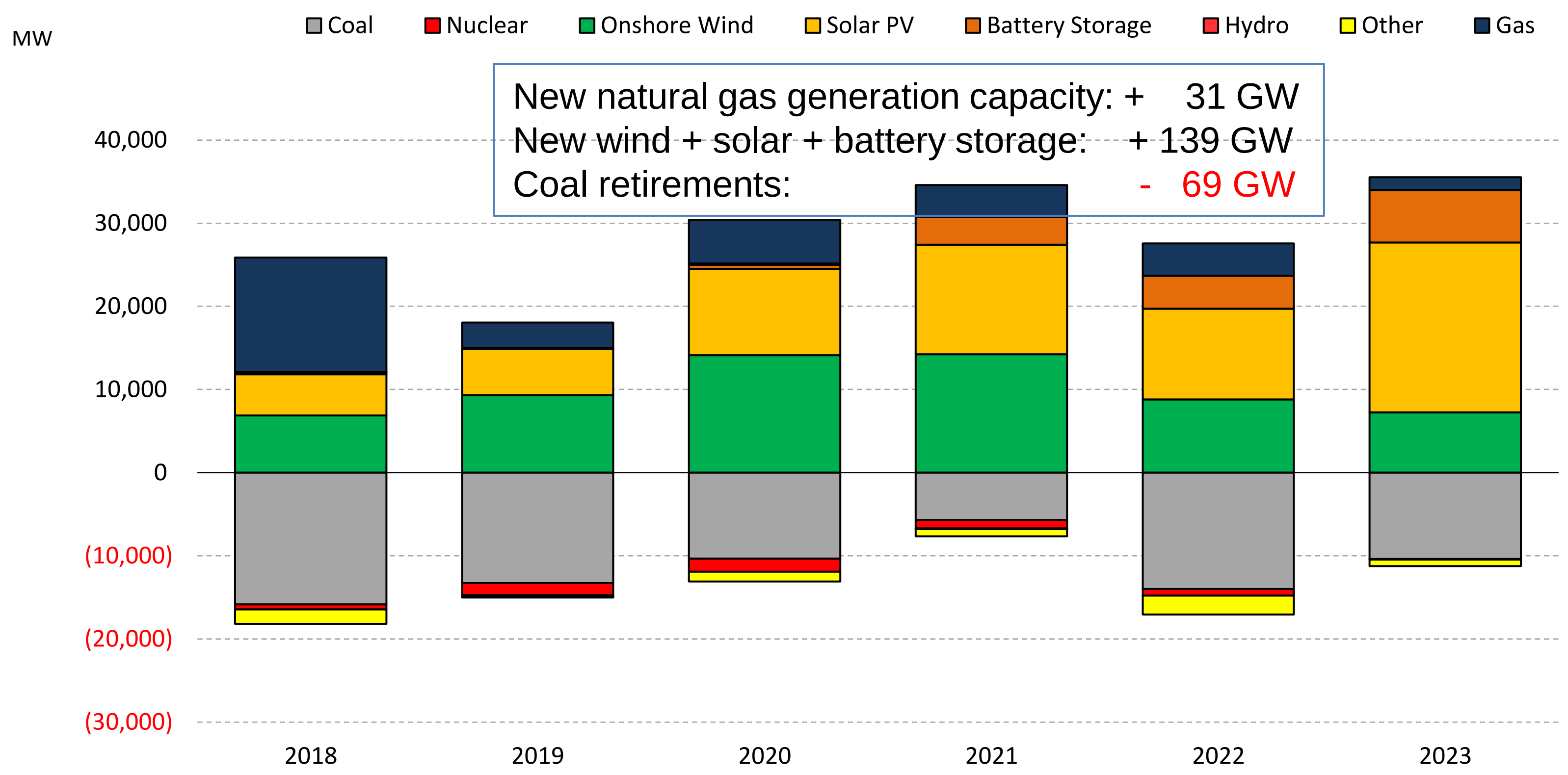
U.S. Power Generation Fuel Mix: Five Year Snapshot 2018-2023

Net change in U.S. generating capacity



Source: Energy Ventures Analysis, U.S. EIA

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Natural Gas Industrial Renaissance by the Numbers

Natural Gas Spurring 22 Major Industrial Projects 2023-2027

$29.8 Billion
Investment to Build

Increase of
0.9 Bcf/d by 2027

16 New Projects

- **10** Petrochemical
- 4 Fertilizer
- **2** Steel

6 Expansions

- 4 Fertilizer
- 2 Petrochemical

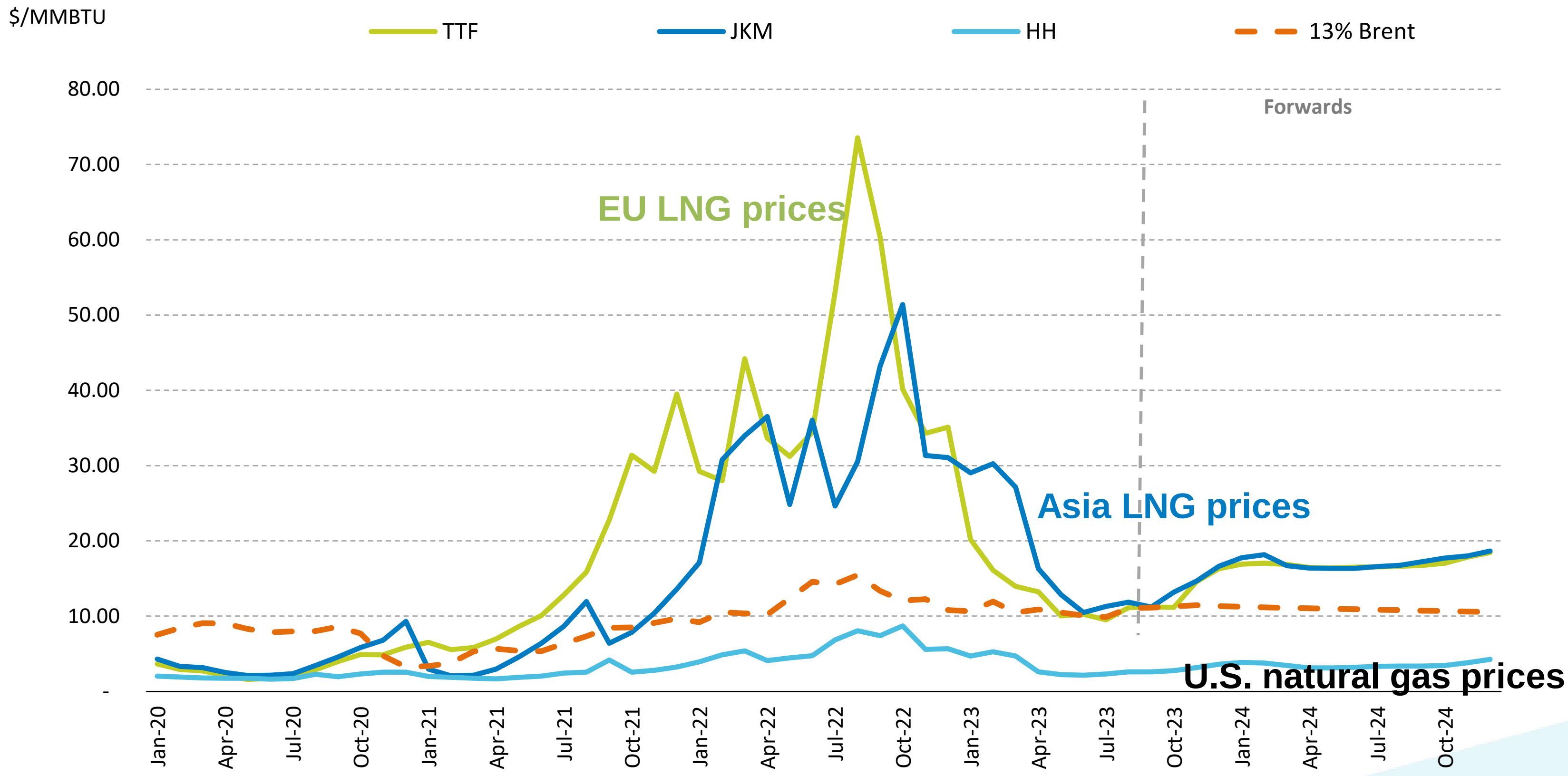
In addition to

56 COMPLETED Projects for additional $98 billion and 1.6 Bcf/d from 2017-2022

Data Source: Energy Ventures Analysis, September 2021
Photo Courtesy: Chevron U.S.A. Inc., 2017 (Pascagoula)

U.S. Natural Gas Prices Exponentially Lower Than EU, Asia

Global LNG price



Source: ICE. Future curves are based on April 18 settlements

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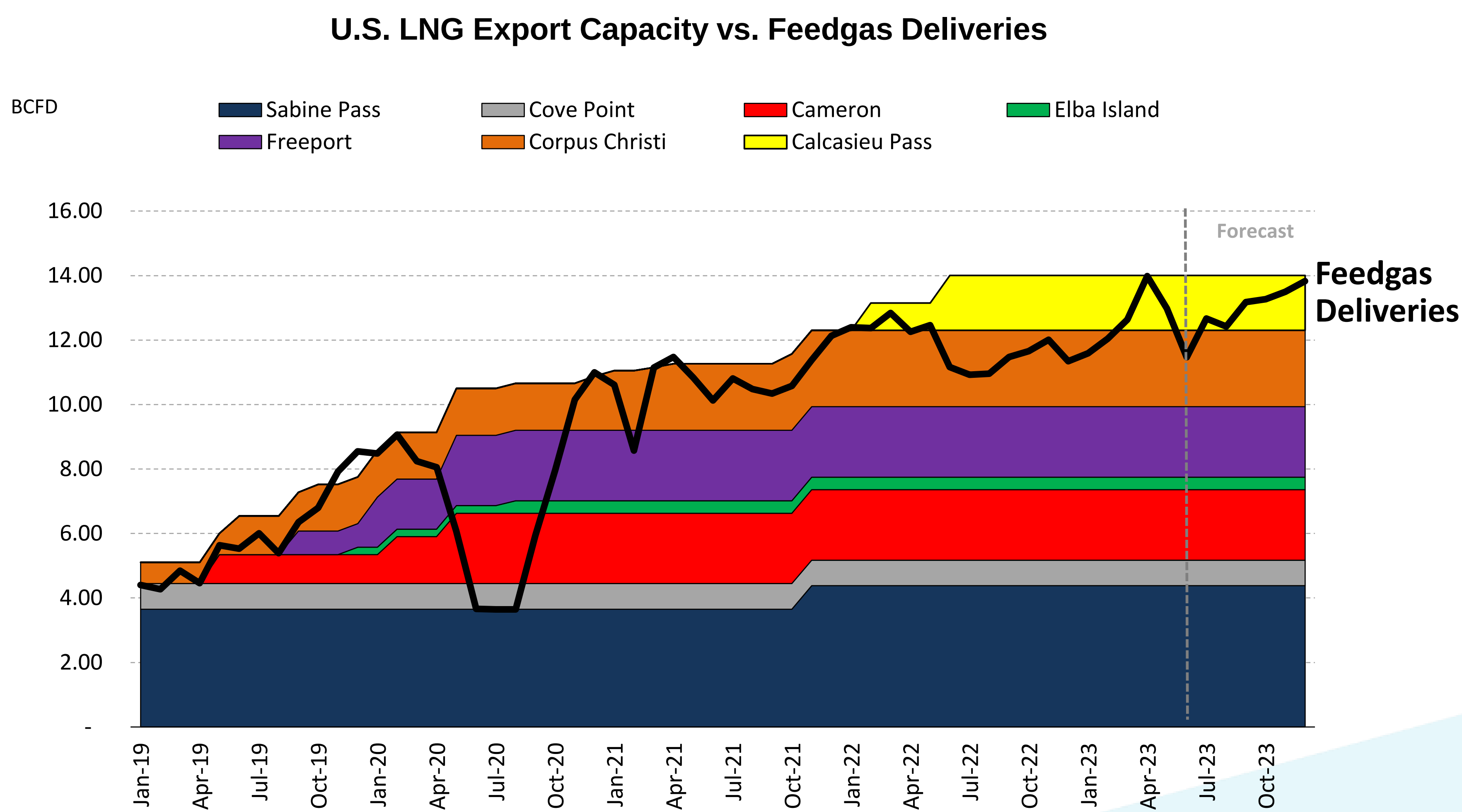
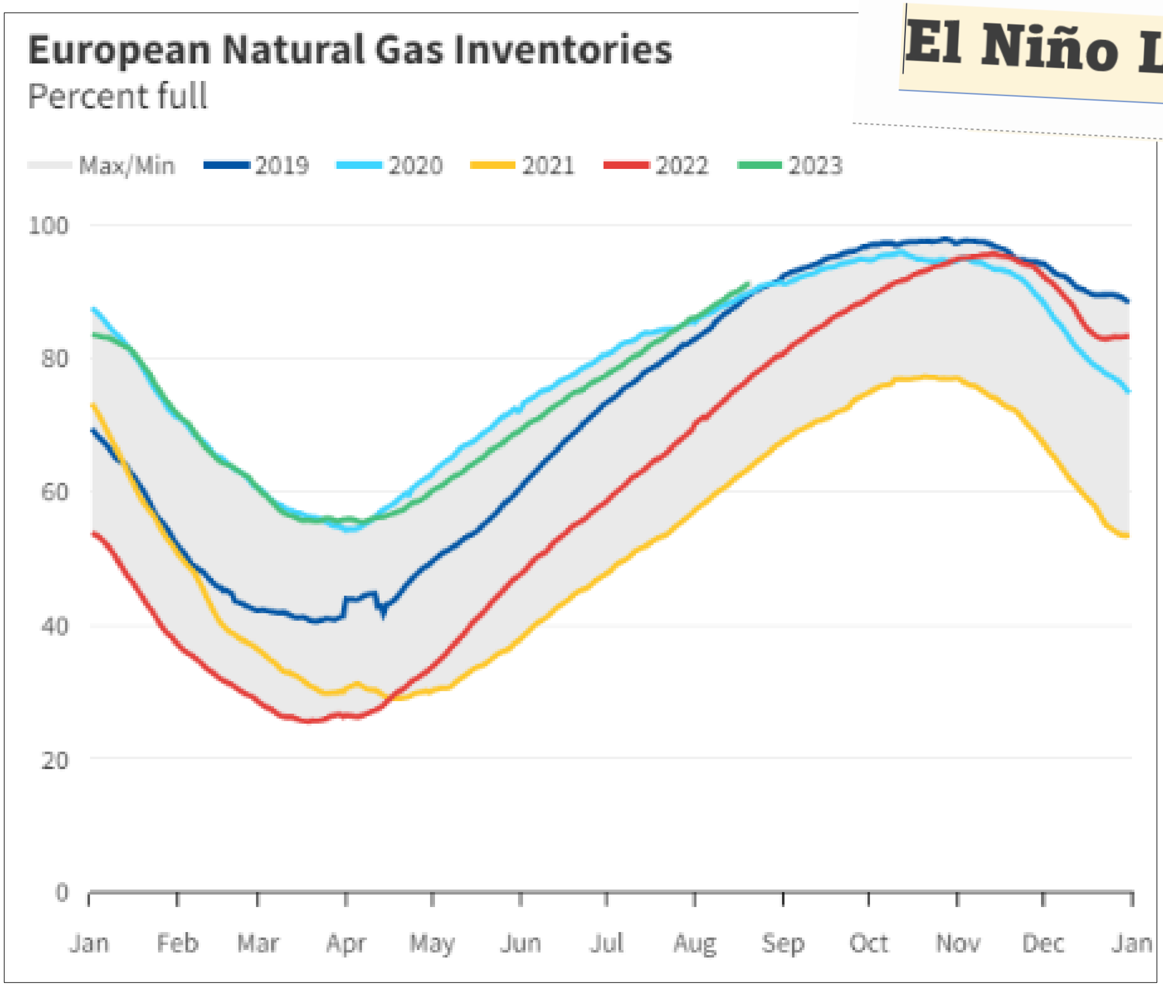
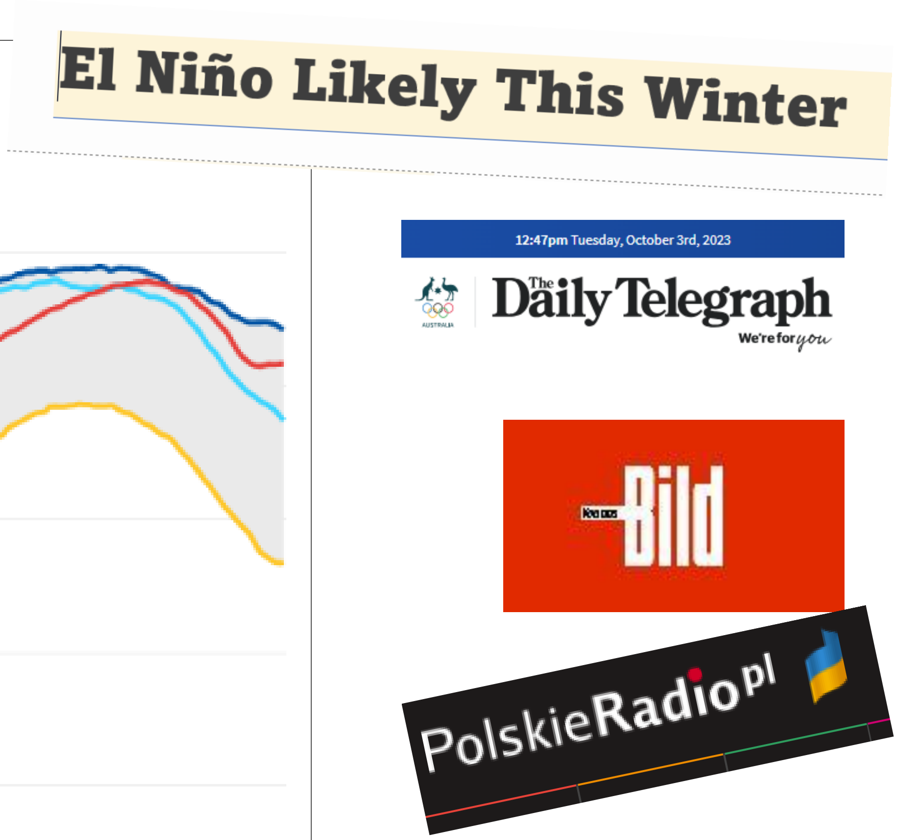
U.S. LNG Exports Respond to European Crisis



Source: Energy Ventures Analysis, EIA

El Niño and Winter Weather for U.S. LNG Export Markets





Source: Gas Infrastructure Europe, Aggregated Gas Storage Inventory

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Supply: Winter Storage

Winter Season Period-to-period change	Last Winter 2022-2023 ACTUAL	This Winter 2023-2024 FORECAST
Start-of-winter inventory	3,567 Bcf	3,708 Bcf
Compared to 5-year average	2% lower	2% higher
Average daily withdrawal from storage	11.6 Bcf	14 Bcf
New storage capacity	+ 0 Bcf	+ 0 Bcf

Winter-to-winter pressure on natural gas prices

Data Source: Energy Information Administration and Energy Ventures Analysis.

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This Season's Winter Outlook

Winter Season Period-to-period change	This Winter 2023-2024 FORECAST
Winter production + imports	
Weather	
Economy	
Overall demand	
Storage	
Winter-to-winter pressure on natural gas prices	

Winter Outlook: Wild Cards

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Natural Gas Outlook: Flexible, Responsive Gas Market

Winter production steady in response to strong demand for natural gas

- Production remains at record levels
  - Associated gas leads the way but supply diverse and balanced
  - Strong storage inventories

Colder weather and exports keep demand high

- Exports – LNG exports stay high as EU replaces Russian gas
- Industrial demand buoyed by colder weather and new facilities
- Residential demand grows with colder weather
- Power sector fuel mix continues to evolve with less coal, more gas, more renewables
- Infrastructure helps protect customers during weather events

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About NGSA

- Represents major producers and suppliers of domestic natural gas
  - Integrated and independent companies: 9 members
  - Founded in 1965
- Only national natural gas association representing producers and suppliers with a dedicated focus on downstream issues
- Promotes benefits of competitive natural gas markets, resulting in reliable and efficient transportation and delivery, increased supply and demand
- Includes the Center for LNG
- Tagline: "Markets Matter"

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