Natural Gas Supply Association

2023 SUMMER OUTLOOK

MARKETS MATTER

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Understanding the Symbols

Upward market pressure

Flat market pressure

Downward market pressure

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2022 Summer Outlook: Outline

LOOKING AHEAD TO SUMMER 2023

Market Pressure Points

- Production/Supply
- Weather
- Economy
- Demand
- Storage

Summer Expectations

Wild Card Factors

SUMMARY

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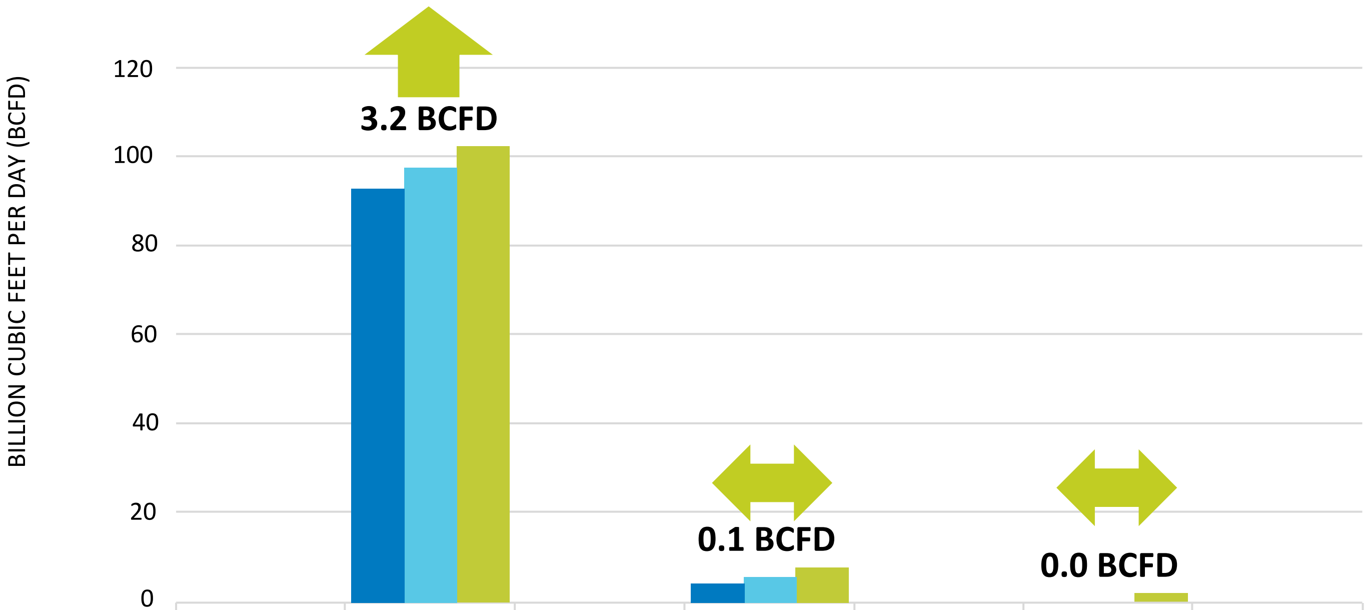
Supply: Projected Record Production 3% More Than Last Summer

Total Supply Forecast: 106.7 Bcf/d

Previous 3-year average: 98.1 Bcf/d   2022 Summer average 103.6 Bcf/d



	Dry Production	Net Canadian Imports	LNG Imports
3yr Summer Avg	93.2	4.8	0
2022 Summer	98.1	5.4	0
2023 Summer	**101.3**	**5.3**	**0.1**

Summer-to-summer pressure on natural gas prices

Data Source: Energy Ventures Analysis, Inc.

Rebound in Non-associated Gas
Adding to Continued Growth of Associated Gas

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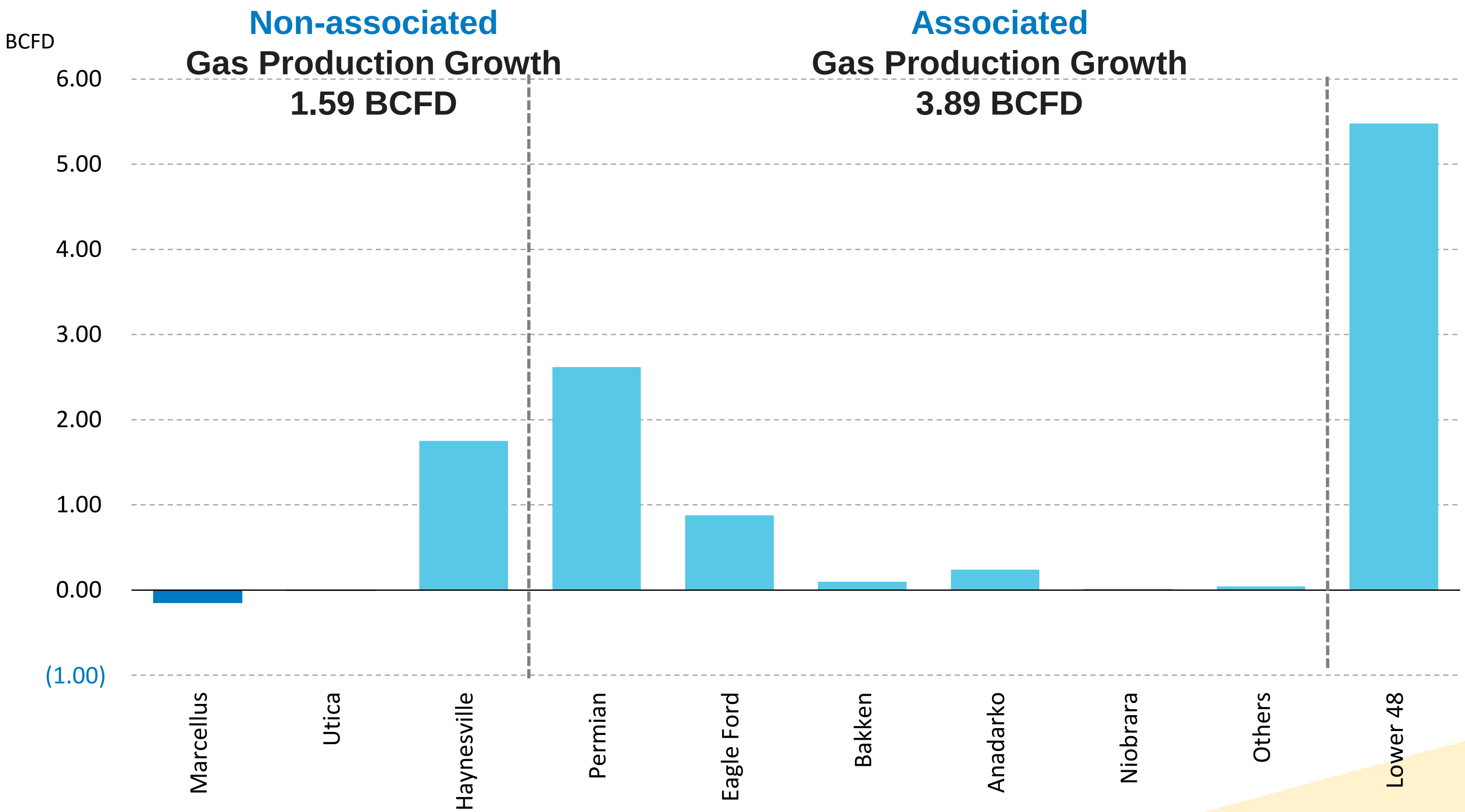
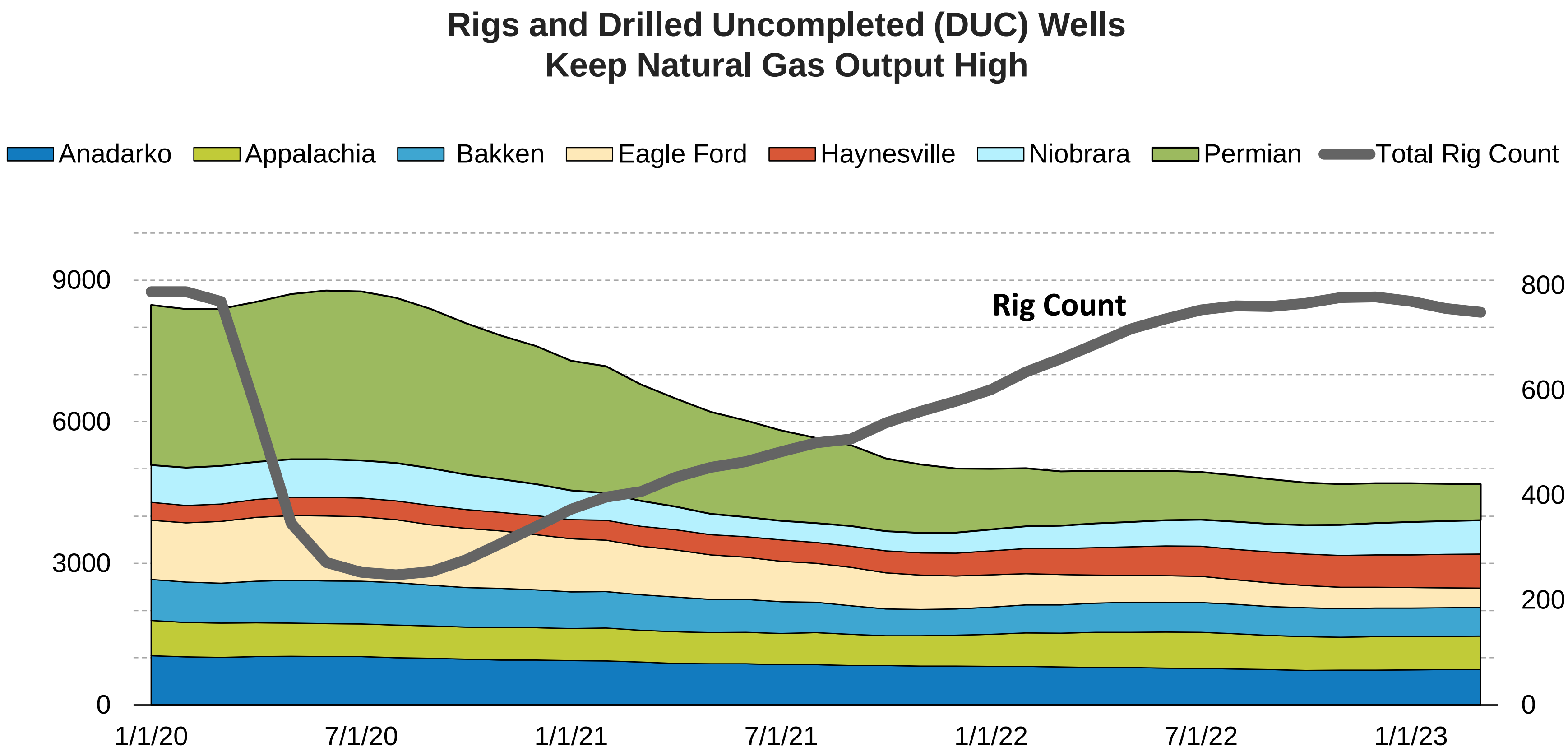
Production Growth by Basin: Comparison of Two Recent Winters (2021-2022 Winter vs. 2022-2023 Winter)



Source: EIA, Energy Ventures Analysis

Efficiencies Buoy Record Production As Rigs Decrease and “DUC” Inventory Levels Out



Data Source: EIA; Energy Ventures Analysis

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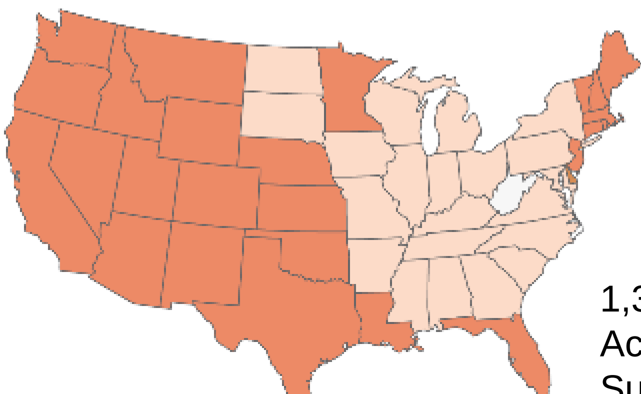
Weather: Summer Cooling Season (April-October)

Last Summer | 2022 ACTUAL

ACTUAL: 1,372 Cooling degree days

Same as 10-year average April-October

But June-Aug was 3rd hottest on record



- Record Warmest
- Warmer Than Normal
- Above Average
- Below Average

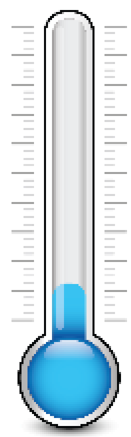
This Summer | 2023 FORECAST

FORECAST: 1,278 Cooling degree days

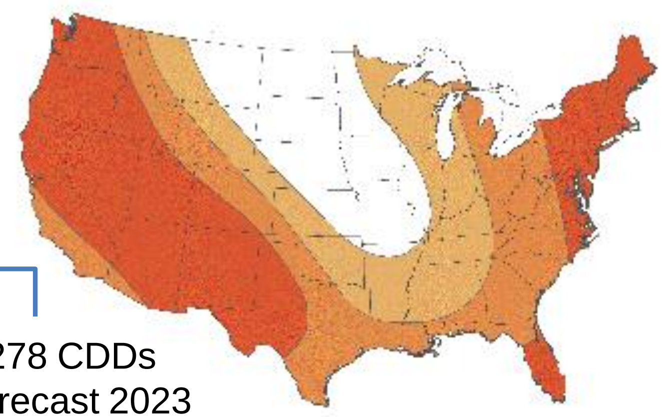
7% *cooler* than 2022 cooling season

7% *cooler* than 10-year average

1,372 CDDs Actual 2022 Summer



1,278 CDDs Forecast 2023 Summer



Summer-to-summer pressure on natural gas prices

Data Sources: National Oceanic and Atmospheric Administration maps, data; Energy Ventures Analysis projections

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Demand: Economy

Summer Season Period-to-period change	Last Summer 2022 Actual	This Summer 2023 Forecast
GDP Growth	3.7%	1.6%
Manufacturing	80%	79%
Unemployment rate	3.6%	3.4%
CPI (annual)	7.9%	4.5%
Consumer Expectations Index	77	68

Summer-to-summer pressure on natural gas prices

Data Sources: Moody's Analytics, Energy Ventures Analysis, Federal Reserve, U.S. Bureau of Economic Analysis, Bureau of Labor Statistics; IMF World Economic Outlook; The Conference Board

Demand: Projected 3% Higher Than Last Summer

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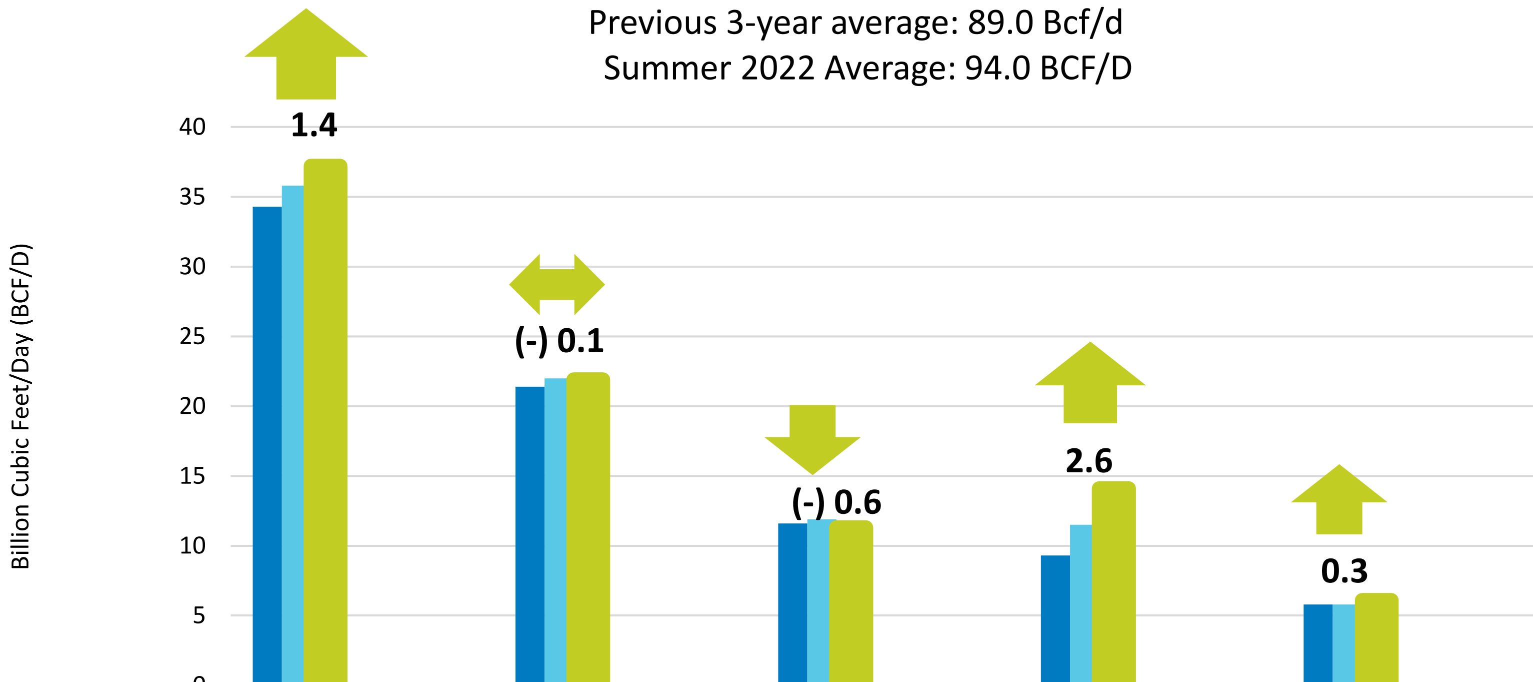
Total Demand Forecast: 97.0 Bcf/d

Previous 3-year average: 89.0 Bcf/d
Summer 2022 Average: 94.0 BCF/D



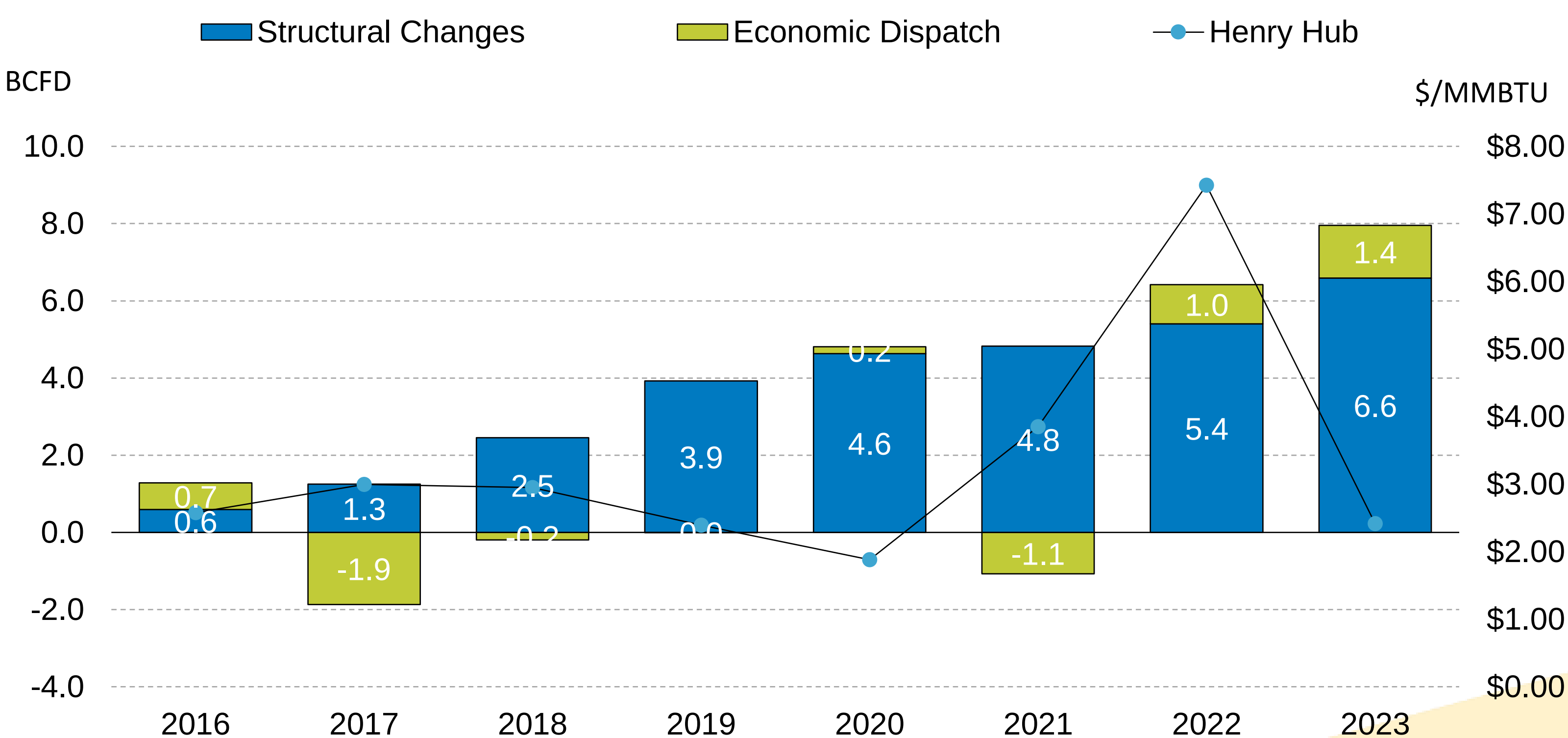
	Power Burn	Industrial	Res/Comm	LNG Exports	Pipeline to Mexico
3yr Summer Avg	34.3	21.4	11.6	9.3	5.8
2022 Summer	35.8	22	11.9	11.5	5.8
2023 Summer	**37.2**	**21.9**	**11.3**	**14.1**	**6.1**

Summer-to-summer pressure on natural gas prices

Data Source: Energy Ventures Analysis, Inc.

Power Burn Growth: Structural Growth vs. Economic Switching

Power Burn Increase
Summer Structural Growth vs. Economic Switching 2017-2022
(compared to baseline of summer 2015)



Data Source: Energy Ventures Analysis
Note: 2023 summer prices are NYMEX settlements as of 4/18/2023

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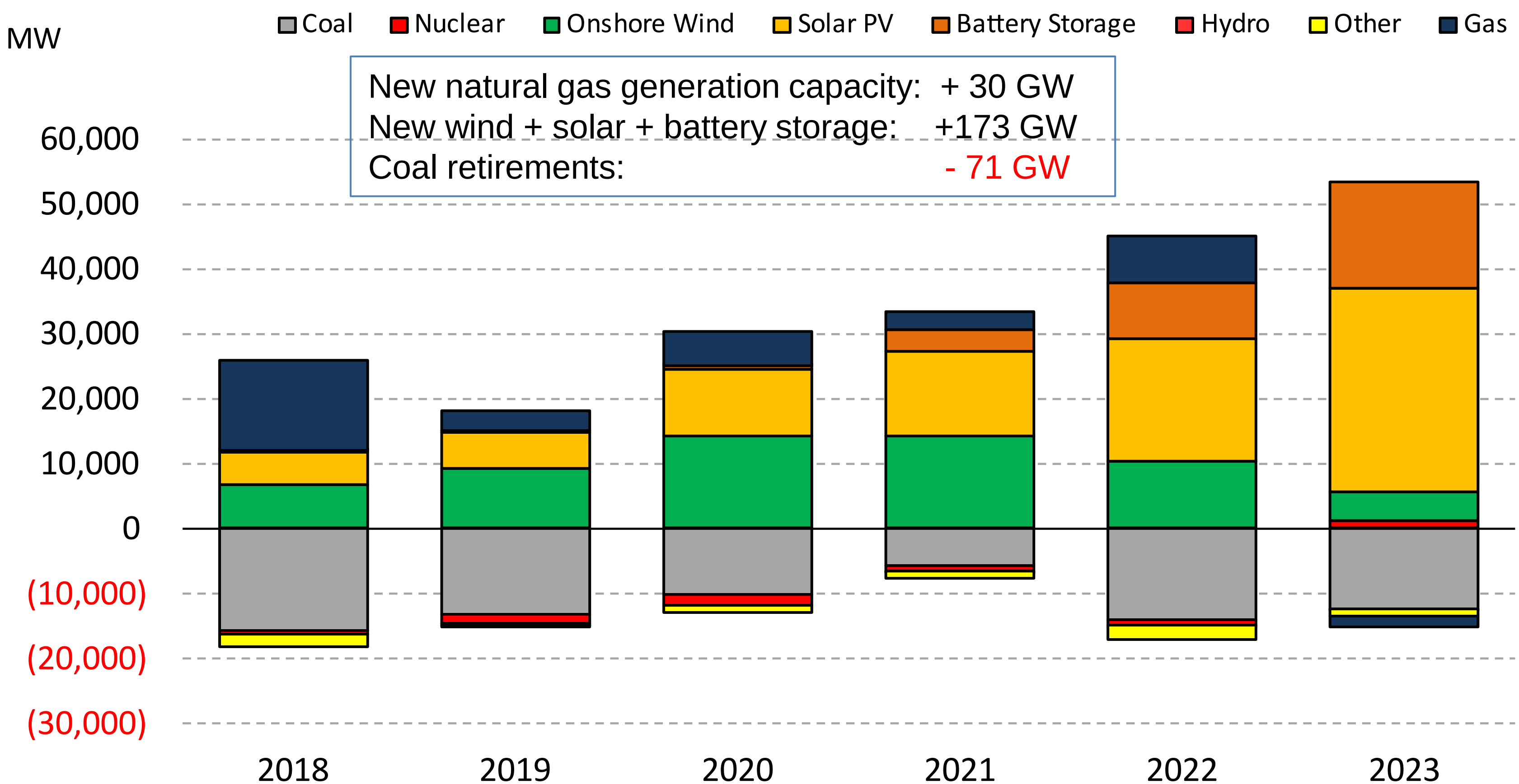
Change in U.S. Power Generation Fuel Mix 2018-2023

Net change in U.S. generating capacity



Source: Energy Ventures Analysis, U.S. EIA

Focus: Industrial Demand Peak Growth Phase

Natural Gas Spurring 19 Major Industrial Projects 2022-2025

$33 Billion Investment to Build	Increase of 0.8 Bcf/d by 2025

13 New Projects

- **10** Petrochemical
- **2** Fertilizer
- **1** Steel

6 Expansions

- **4** Fertilizer
- **2** Petrochem

1 Re-start

- **1** Steel

In addition to

49 **COMPLETED Projects** for additional $98 billion and 1.3 Bcfd from 2017-2021

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

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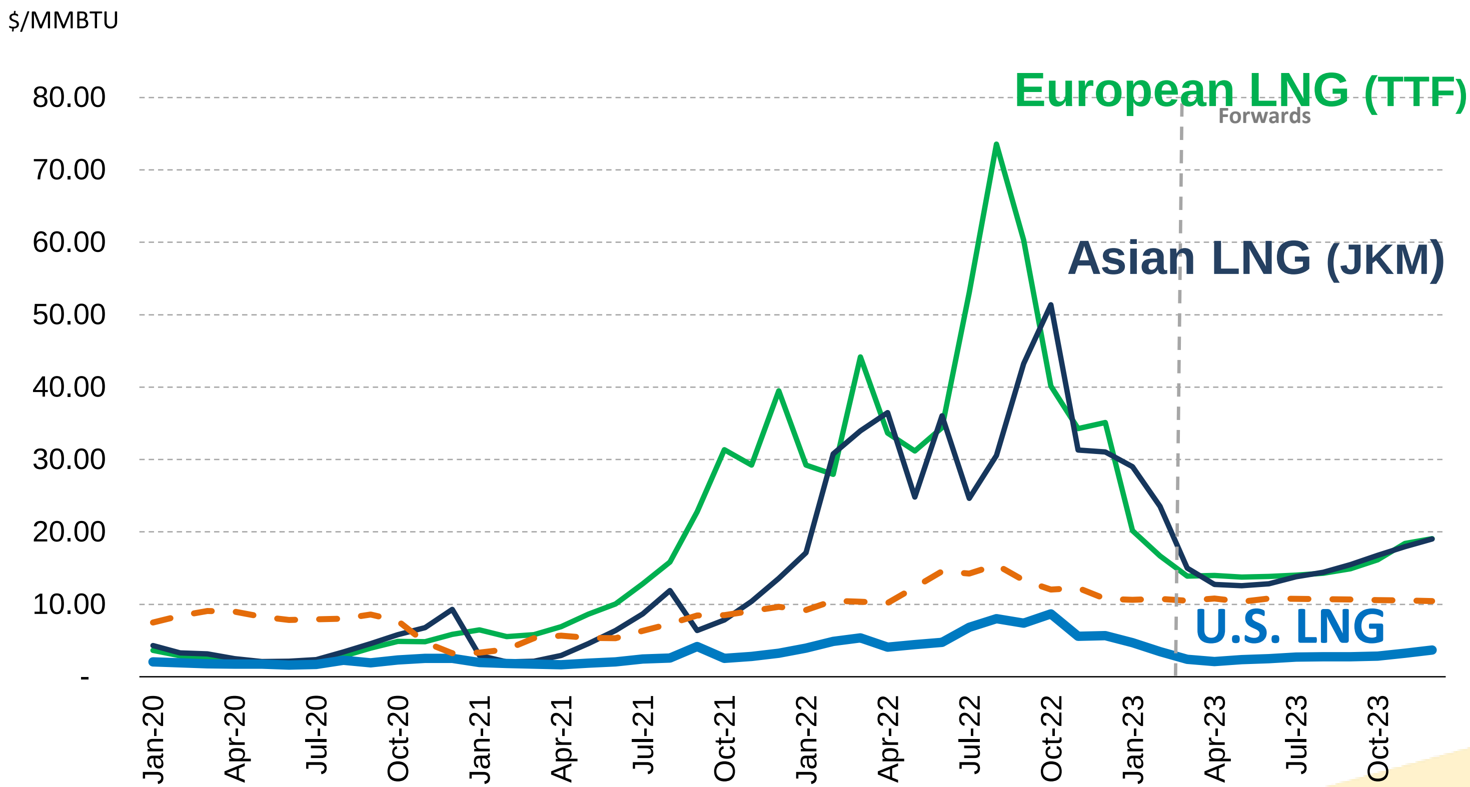
U.S. Prices Level Compared to Europe, Asia

Global LNG prices



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

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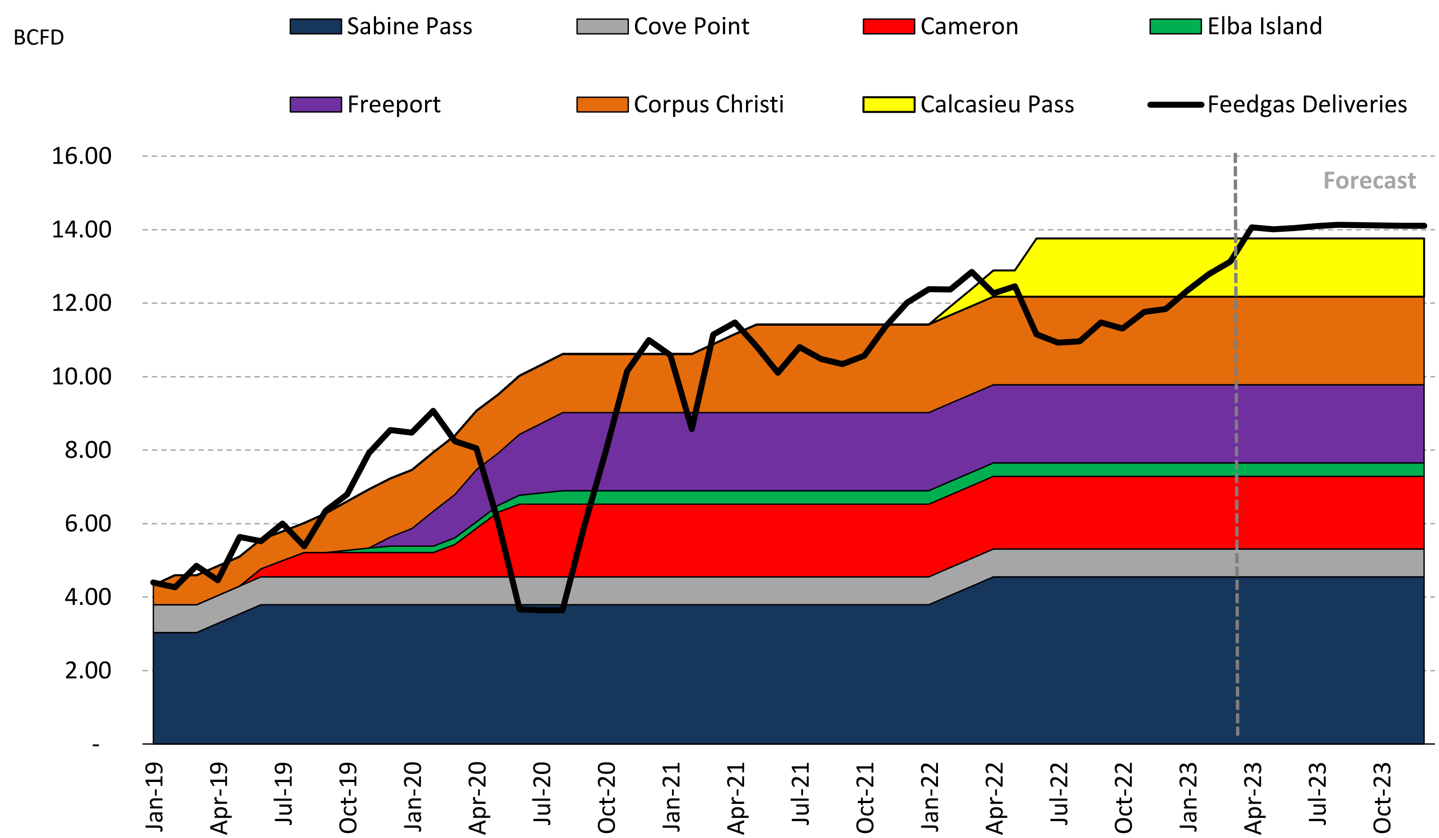
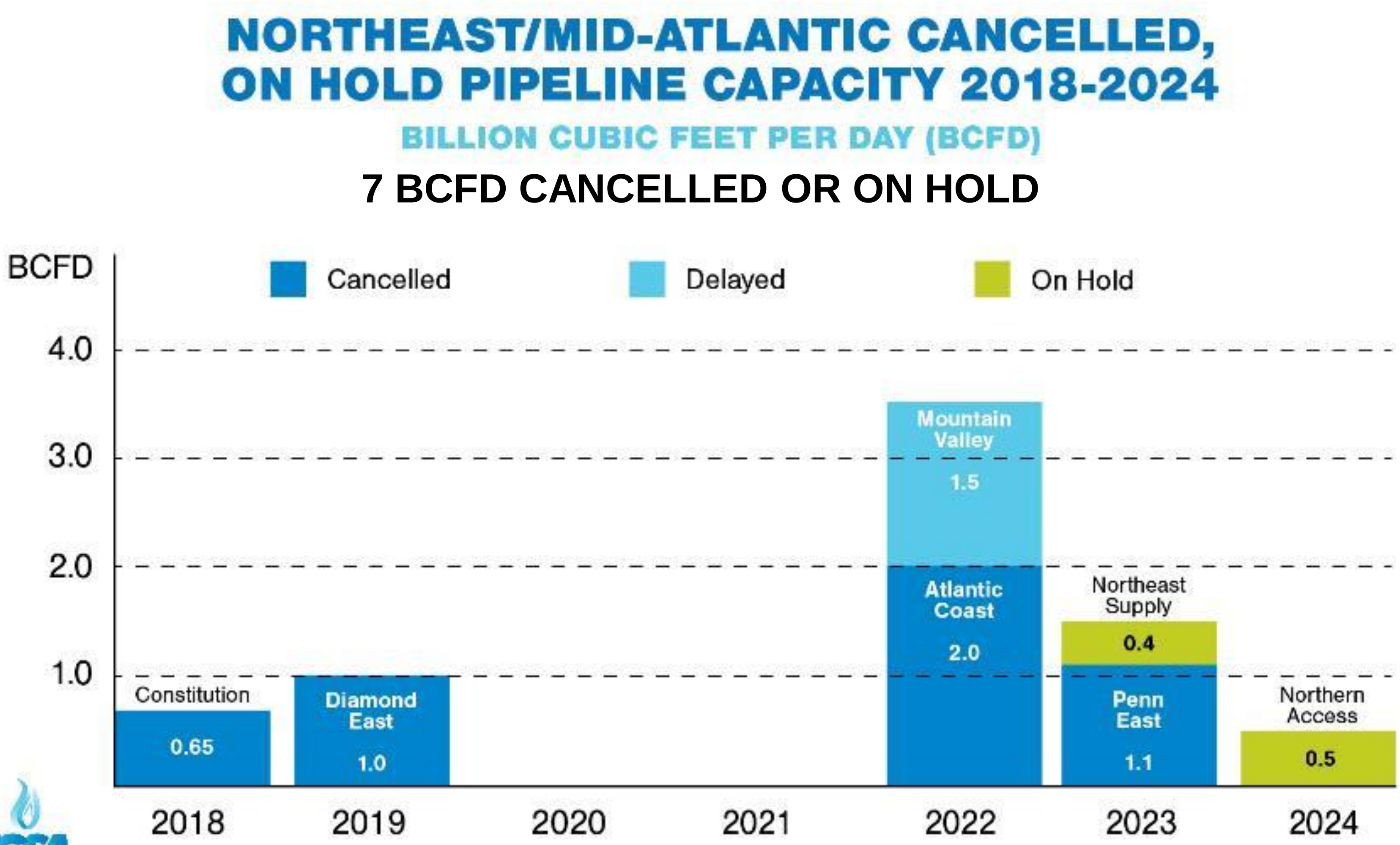
U.S. LNG Exports Respond to European Crisis

U.S. LNG Export Capacity vs. Feedgas Deliveries



Source: Energy Ventures Analysis, EIA

Cancelled, Delayed Pipelines Reflect Difficulty of Permitting



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Summer Storage

Summer Season Period-to-period change	Last Summer 2022 ACTUAL	This Summer 2023 FORECAST
Summer starting point	1,381 Bcf	1,827 Bcf
Average daily injections	9.5 Bcf/d	9.7 Bcf/d
End of injection season	3,542 Bcf	3,895 Bcf

Summer-to-summer pressure on natural gas prices

Data Source: Energy Information Administration and Energy Ventures Analysis.

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This Season's Summer Outlook

Summer Season Period-to-period change	This Summer 2023 FORECAST
Summer Supply	↓
Weather	↓
Economy	↓
Customer demand	↑
Summer storage	↓
Summer-to-summer pressure on natural gas prices	↓

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Summer Outlook: Wild Cards

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Natural Gas Outlook: Final Thoughts

Summer production record-setting even with slowing rig count

- Producers ramped up production to record levels
  - DUCs enabling production to get to market faster
  - Drilling rigs declining but efficiencies boost production
  - Non-associated gas contributes along with associated gas

Summer power burn and LNG exports keep demand strong

- Power burn expected to hit record demand for natural gas despite milder summer
- Exports – LNG exports continue strong as EU countries replace Russian gas
- Industrial demand slows minimally with slowing economic growth
- Power sector fuel mix continues to evolve with more gas and renewables, less coal

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About NGSA

- Represents major producers and suppliers of domestic natural gas
  - Integrated and independent companies: 8 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
- Combined with the Center for LNG

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Contact:

Daphne Magnuson
dmagnuson@ngsa.org
@natgas_ngsa
www.ngsa.org