



# GEOPOLITICAL UPDATE

MODERN CONFLICTS SHAPING OUR WORLD

BEN SMITH, POWER TRADER

# Why Geo-politics at an Energy Conference?

- The conflicts that are currently being waged are the most obvious and leading indicator of the return of Great Power Competition. *We are in a Second Cold War.*
- LNG Supply / Demand
- Supply Chain Fragility and Impact
- The Risk and Speed of Escalation
- Arsenal of Democracy
  - Resilience
  - Reliability
- Nuclear War - The Pandoras Box
- Weakened by 30 years in a unipolar world with the USA as the singular dominant power
- We are unprepared for near-peer attritional warfare
- *Given current trends we are more likely to be pre-conflict than post conflict*



# Nature versus Character of Conflict

*"War is a human endeavor—a fundamentally human clash of wills often fought among populations."*

US ARMY Doctrine Publication 3-0



# The Changing Character of Conflict

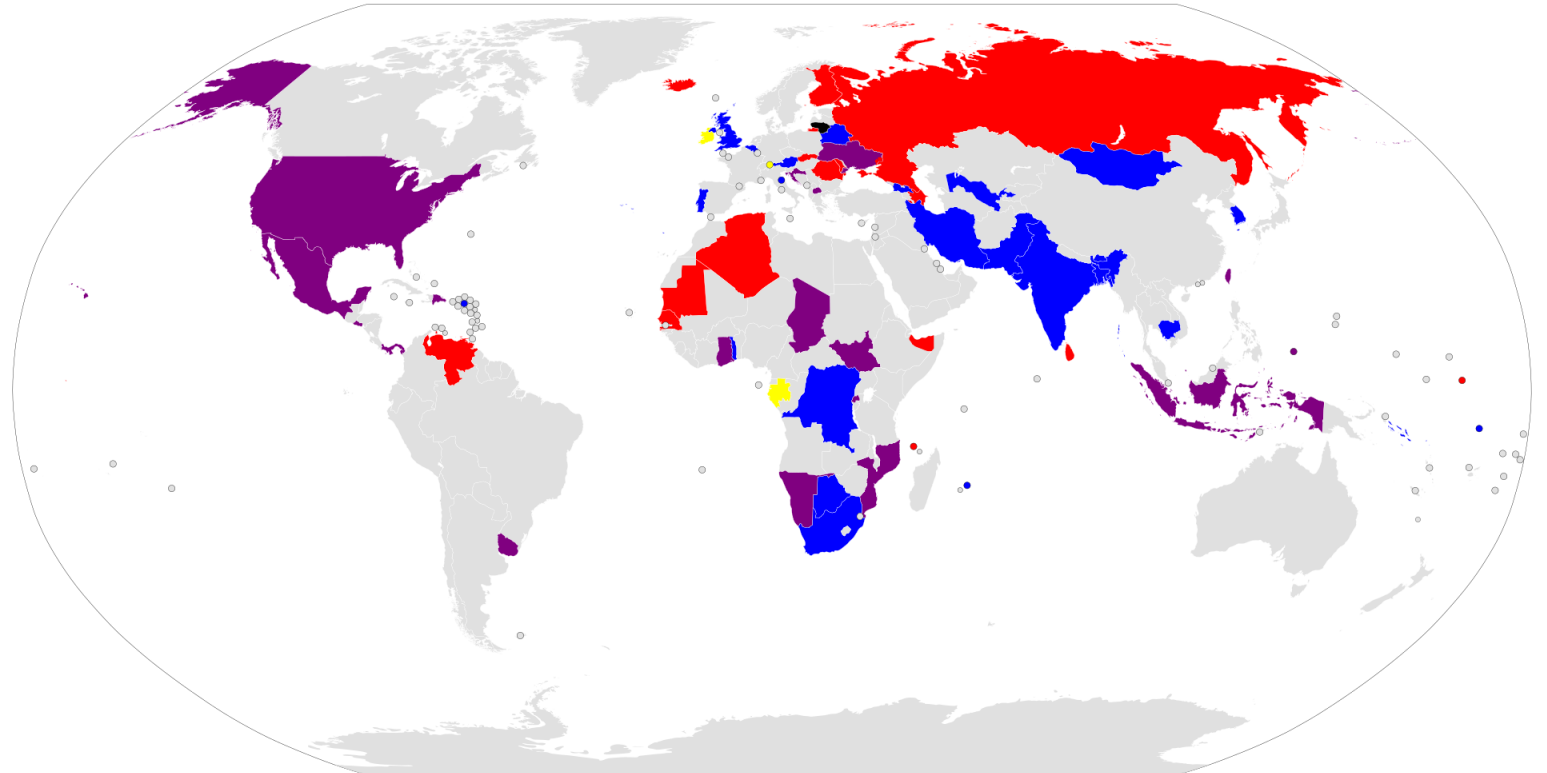


# The Nature is Constant



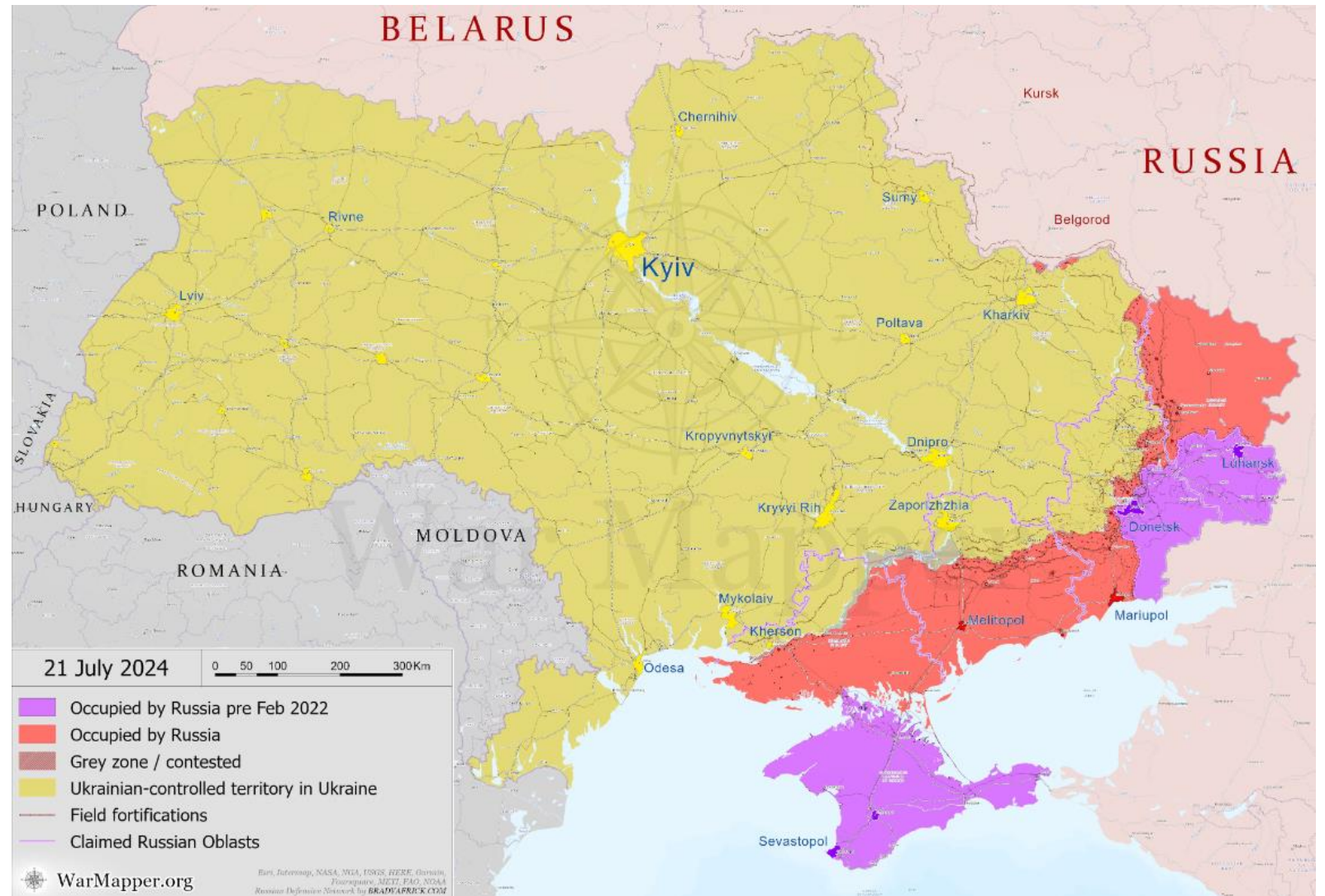
# Current State - 2024

- Elections in 64 Countries - 49% of Global Population
  - US
  - Mexico
  - Taiwan
- Conflict and growing uncertainty
  - Ukraine
  - Middle East / Red Sea
  - China-Taiwan
- Failure of Deterrence
- Against a backdrop of -
  - Demographic Change
  - Deglobalization / On-shoring
  - AI Revolution
  - Load Growth
  - Climate Change



# Ukraine

- Russia-Ukraine Conflict is now in its 3<sup>rd</sup> year
- Culmination of both Ukraine and Russian Offensives
- Stagnation but not stalemate on the frontline
  - Russian numerical dominance
  - Ukrainian tactical advantage
- 2024 will see a focus on regeneration
  - Securing ammunition supply
  - Training / Equipping Forces
  - Conscription
- Ukraine priority will be to prepare for next offensive in Spring 2025
  - War wiriness
  - Uncertainty of the US election

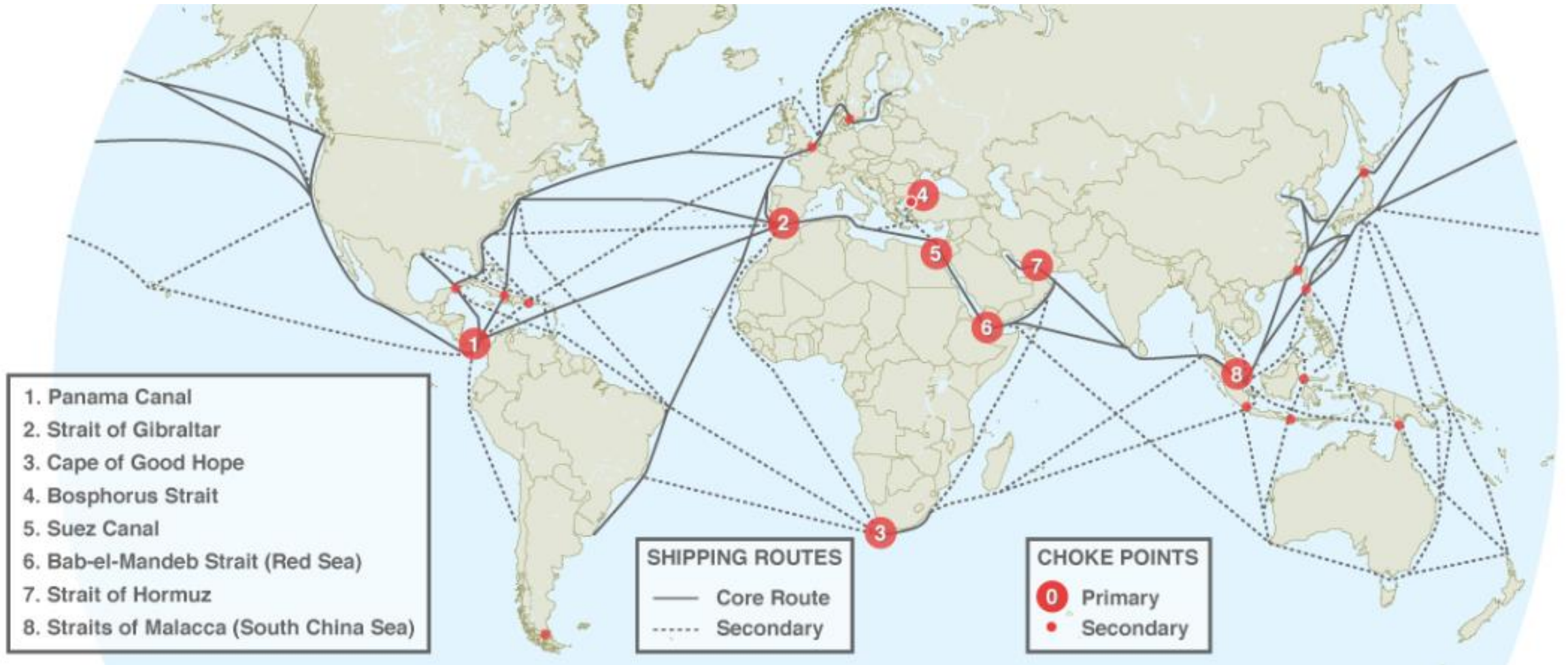


# Supply Chains - The Chains that Bind Us



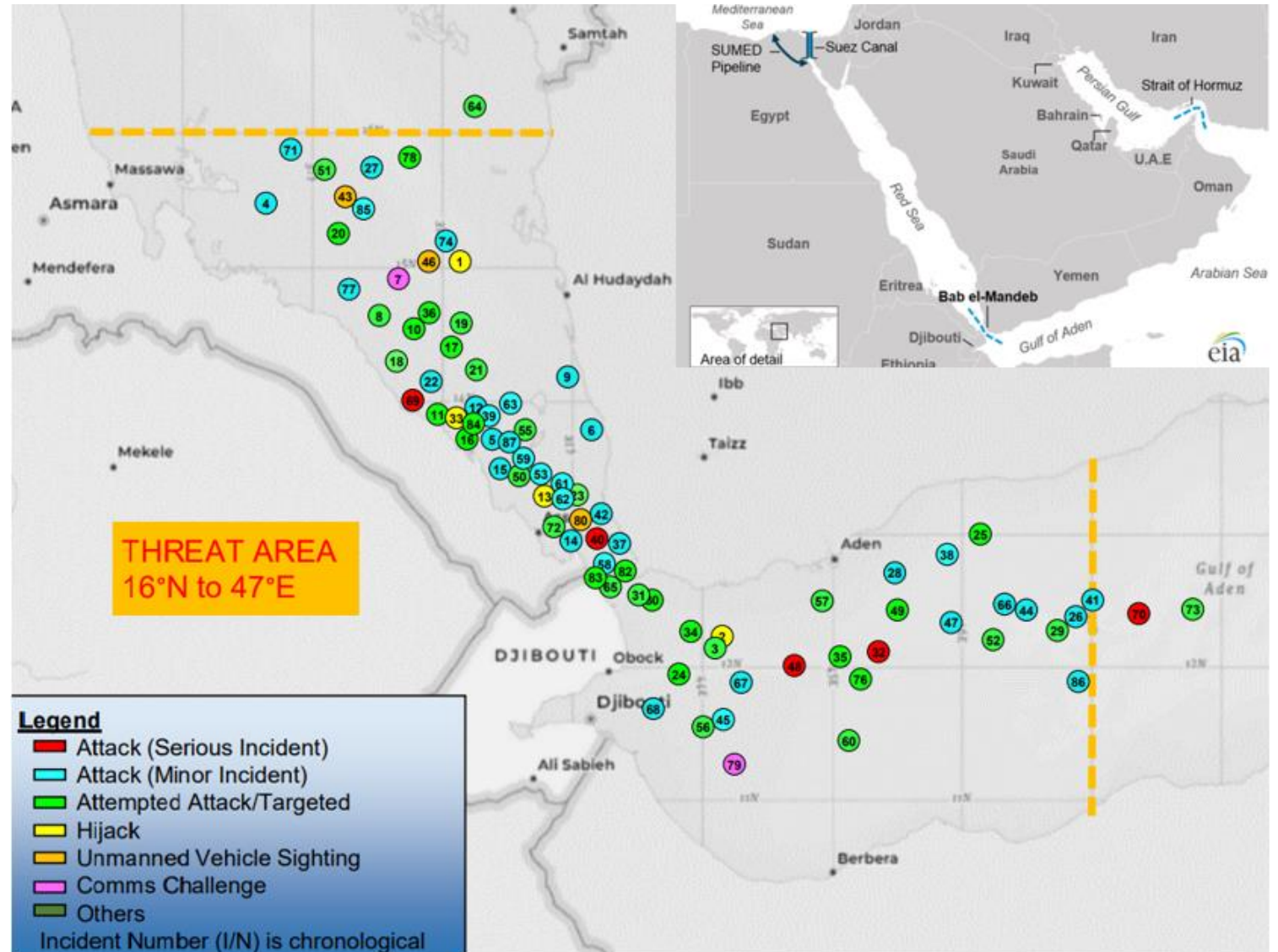


# Maritime Choke Points



# RED SEA – The Gate of Tears

- The Gaza conflict as feared provided the catalyst for actions that have had a global impact
- The confirmation of Houthis as regional power
  - +87 attacks by Houthis since Nov. 19, 2023
  - 4 ships hijacked
  - 39+ ships hit or damaged
  - 2 ships sunk
- War risk insurance up from 0.1% to 1%
- Suez transits down 54%
- 140+ Strikes against US Forces by Iran proxies across the region
- US / UK retaliatory strikes against 100+ targets across Yemen, Syria and Iraq



# Global Container Traffic Flow

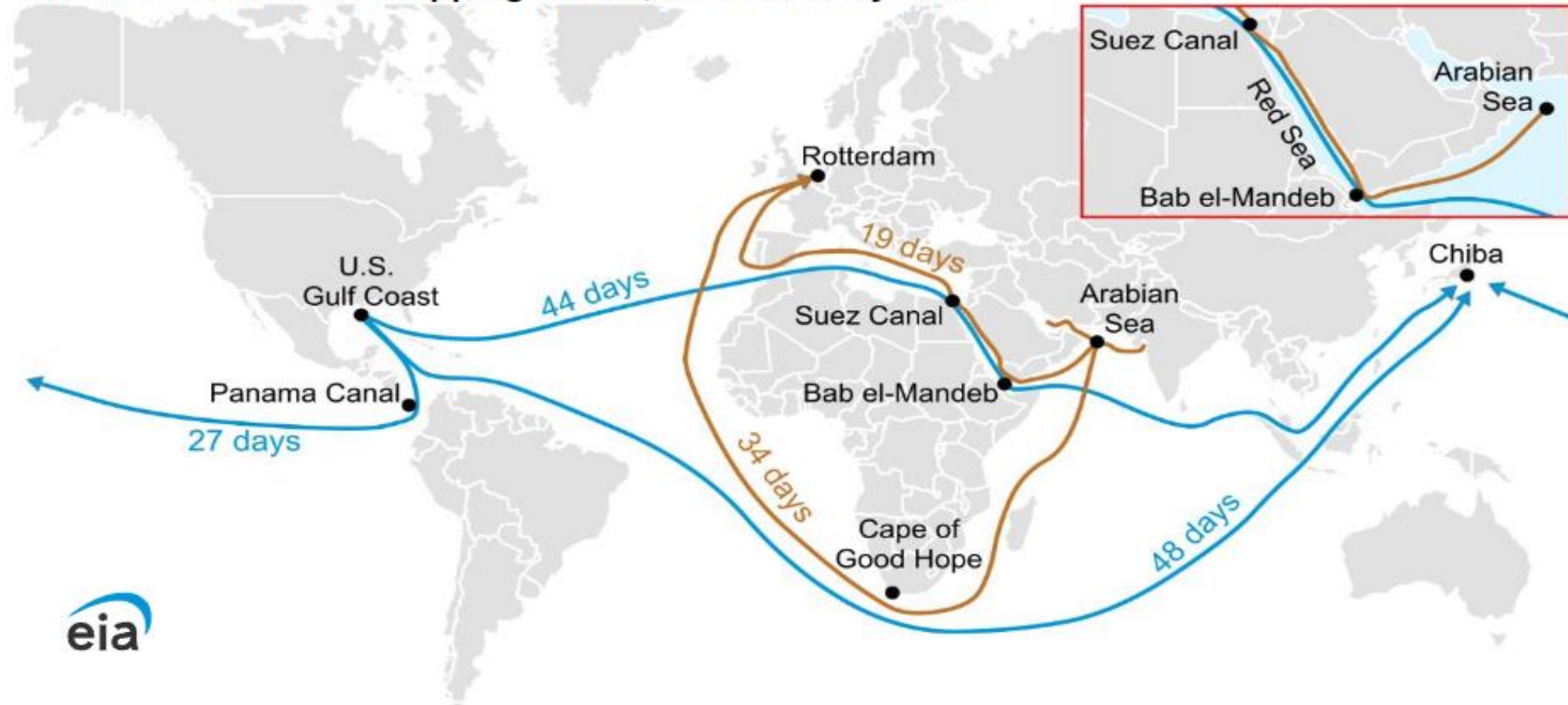


# Mega Max (18,000 TEU) Container Traffic Flow



# RED SEA – Impacts

Selected commercial shipping routes, as of January 2024



**Data source:** U.S. Energy Information Administration using calculations from Vortexa

**Note:** Voyage time is calculated for laden Suezmax tankers traveling at 14 knots without extended chokepoint delays.

# Global Container Traffic Flow

Route	Route code	04-Jul-24	11-Jul-24	18-Jul-24	Weekly change (%)	Annual change (%)
Composite Index	WCI-COMPOSITE	\$5,868	\$5,901	\$5,937	1% ▲	286% ▲
Shanghai - Rotterdam	WCI-SHA-RTM	\$8,056	\$8,048	\$8,267	3% ▲	540% ▲
Rotterdam - Shanghai	WCI-RTM-SHA	\$643	\$631	\$630	0%	19% ▲
Shanghai - Genoa	WCI-SHA-GOA	\$7,573	\$7,614	\$7,727	1% ▲	306% ▲
Shanghai - Los Angeles	WCI-SHA-LAX	\$7,472	\$7,512	\$7,288	-3% ▼	271% ▲
Los Angeles - Shanghai	WCI-LAX-SHA	\$696	\$699	\$701	0%	-16% ▼
Shanghai - New York	WCI-SHA-NYC	\$9,158	\$9,387	\$9,612	2% ▲	231% ▲
New York - Rotterdam	WCI-NYC-RTM	\$656	\$682	\$710	4% ▲	-4% ▼
Rotterdam - New York	WCI-RTM-NYC	\$1,977	\$1,955	\$1,943	-1% ▼	18% ▲

Drewry World Container Index (WCI) - 18 Jul 24 (US\$/40ft)



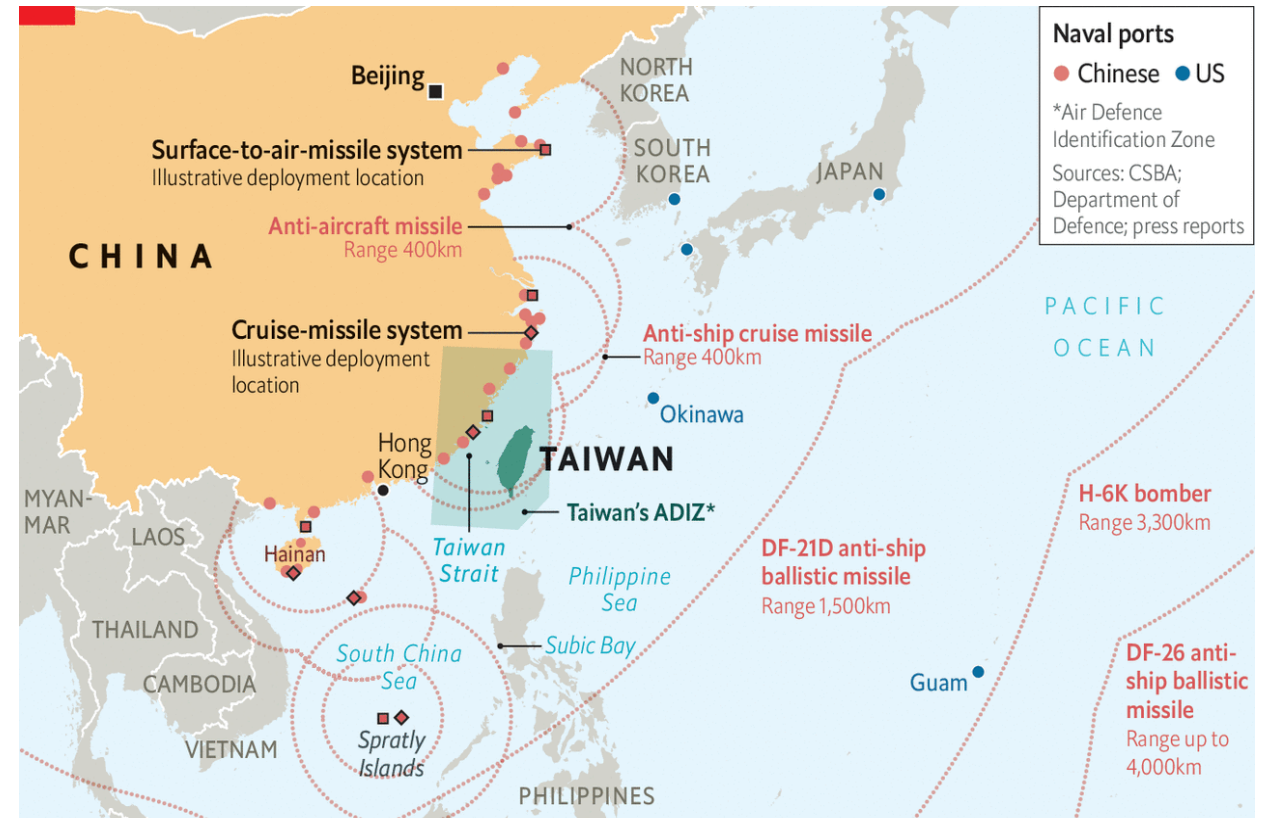
# China Taiwan – The Grey Swan Event

- Intent and Capability
  - Political goal
    - Xi Speeches in 2022-23 culminating at 20<sup>th</sup> Party Conference March 2023
- Strengthening of domestic laws
  - Limitation of foreign entity rights
- Strengthening of infrastructure
  - Air raid shelters
  - Field hospitals
- Limiting western access to data (mid 2023)
- Insulating financial system from sanctions
- Stockpiling of critical resources
  - Limiting and securing energy dependencies
  - Stockpiling food / fuels



# China Taiwan – Armed Confrontation

- 2024-2028 is the most advantageous time for China to launch invasion
- PLA has been restructured and armed for a fight with the US in the Pacific
- PLA has been training for a confrontation-
  - Missile and air-strikes (2022)
  - Rapid mobilization (2022-23)
  - Blockades (2023-24) – Both data and physical
- However yet to see large amphibious landing exercises
  - Challenging maritime environment
- Wargame simulations have shown the US would struggle to prevent a Chinese landing
- Rapid increase in number of ICBM silos
- Learning lessons from Ukraine

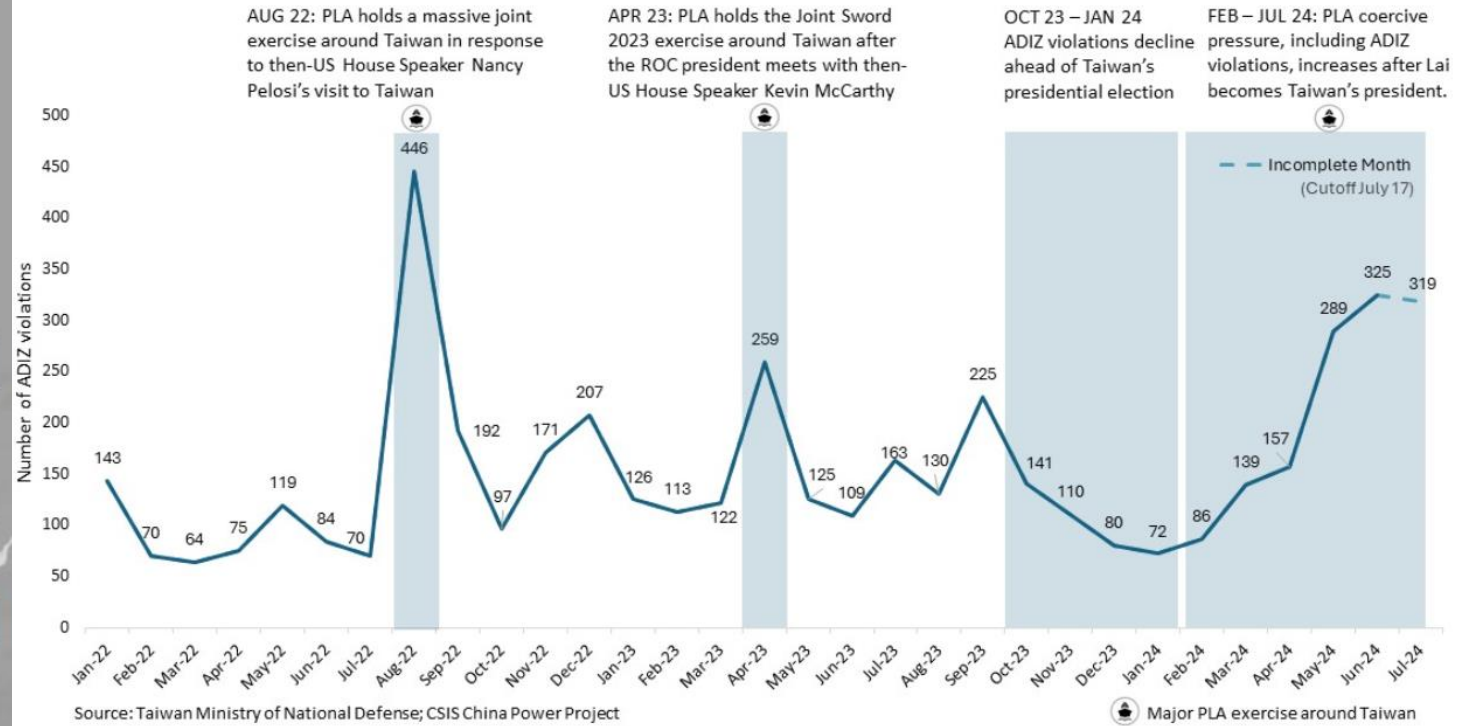


The Economist

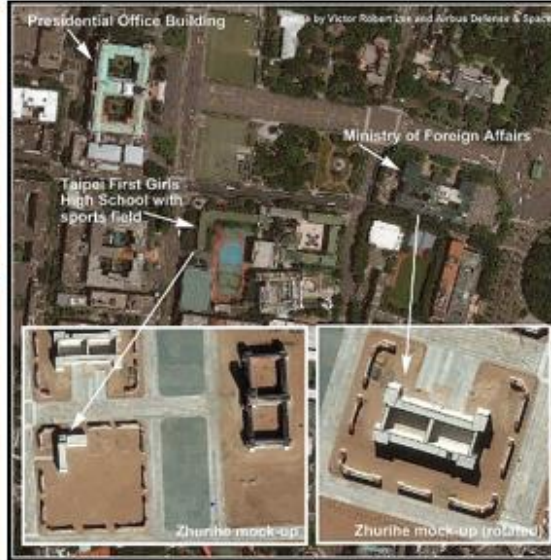


# BLOCKADE DRILLS May 2024

## CHINESE MILITARY EXERCISE JOINT SWORD-2024 A



# Taiwan in Inner Mongolia



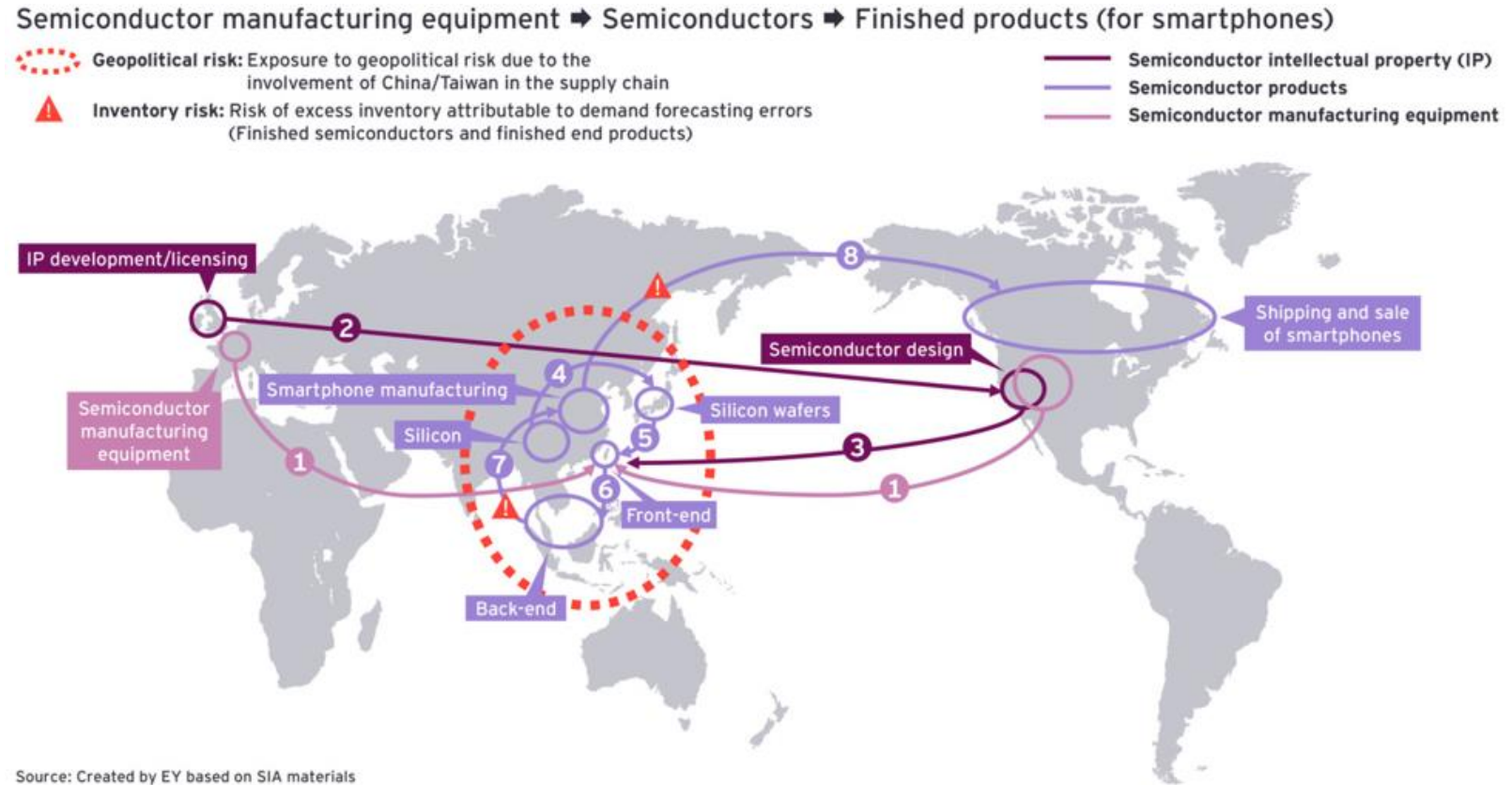
Soldiers appear to be conducting an assault on a building that resembles Taiwan's Presidential Office at Zhurihe military training base Inner Mongolia, PRC. July, 2015. Image from China-based web pages is labeled with the logo of the PLA's China Military Net website

Taichung Airport West Coast of Taiwan 24 Nov, 2014

Mock-up of Taichung Airport Gansu Province, PRC 18 May, 2013

# China Taiwan Impacts- Semiconductors

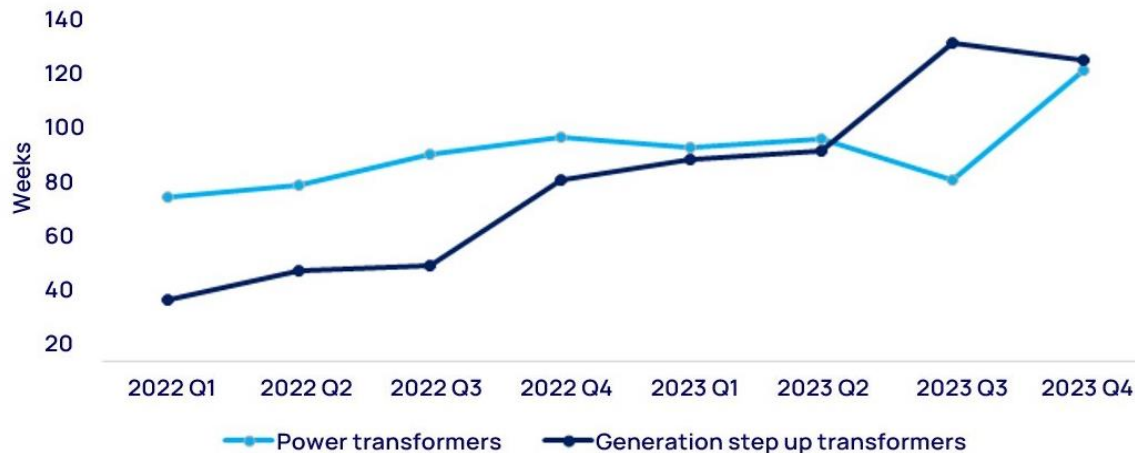
- >90nm - Concentrated in China
- 90nm < 10nm – Globally Diverse
- <10NM – Concentrated in Taiwan
  - 68% of Global supply <14NM
- 3nm - latest phones
- Over 7000 sub-contractors
- 1 provider of EUV Lithography –ASML



# China Taiwan Impacts- Steel Batteries Drugs

- Electrical Steel – 30 to 40 month delay
  - 20% US Demand met by domestic supply
  - Wait times increased from 50 week in 2021 to 120 weeks in 2024
- Green Tech – Refining / Finished Products
  - 70% Global lithium battery production
- Pharmaceuticals

Power transformer and GSU lead times benchmark: Q1 2022 – Q4 2023

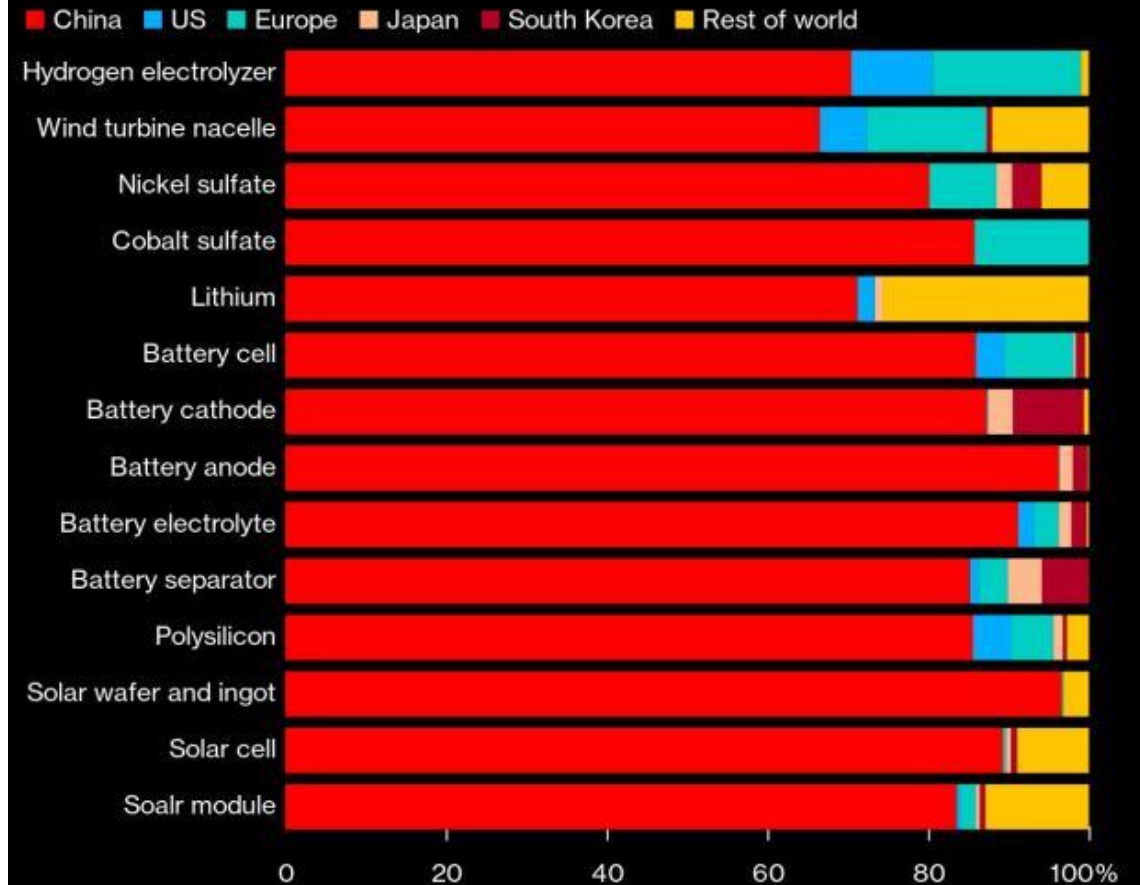


Source: Wood Mackenzie

CONFIDENTIAL & PROPRIETARY

## China Extends Dominance of Clean-Tech Supply Chains

Its share of global manufacturing capacity is now above 80% in 11 clean-tech segments



Source: BloombergNEF



QUESTIONS?



2024 Annual Conference



# GAS MARKET UPDATE

MICHAEL GEHRING, CFA

DIRECTOR, PORTFOLIO MANAGEMENT & ANALYTICS

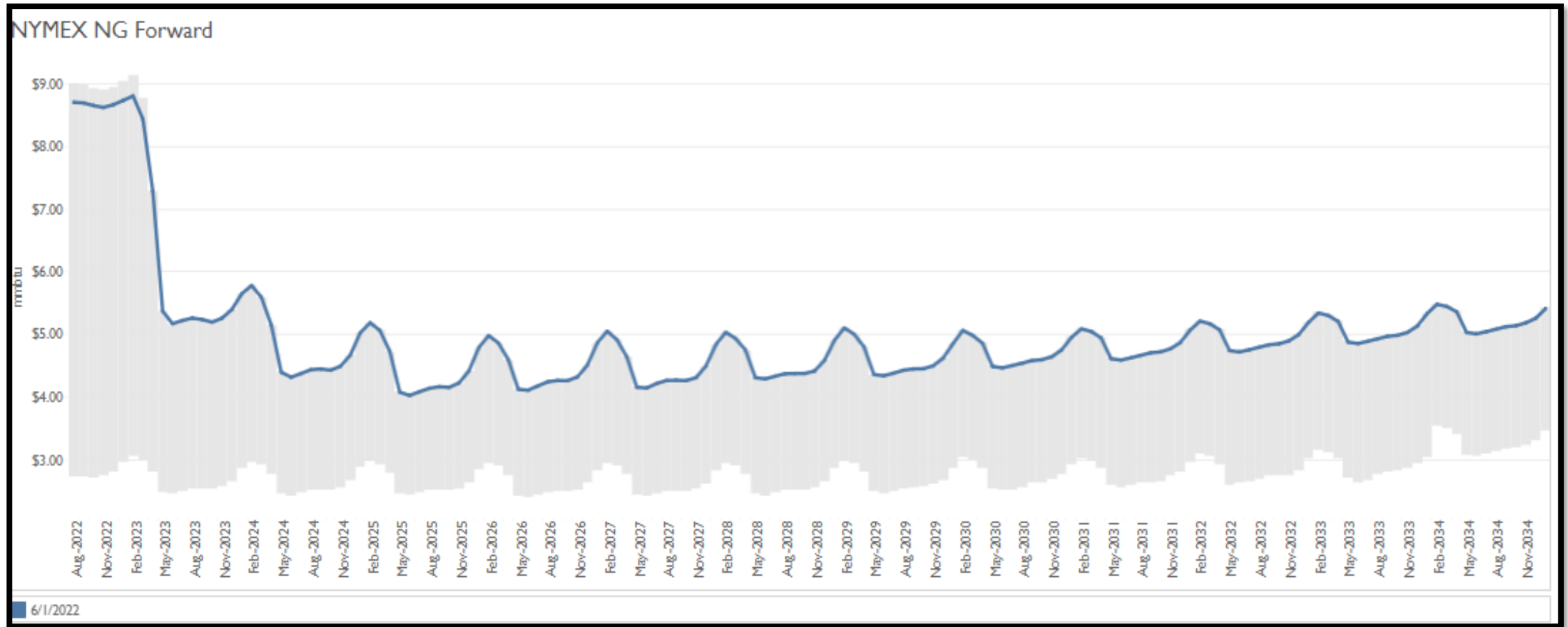


TEA

MARKET INSIGHTS

**EXPECT VOLATILITY & PREPARE**

# ACTIVITY – THE DATE IS JUNE 1, 2022





#MrsMaisel



**CLOSE YOUR EYES**



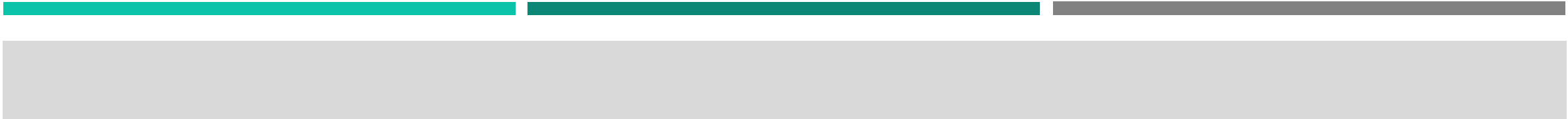


**BIDEN LNG EXPORT PAUSE**



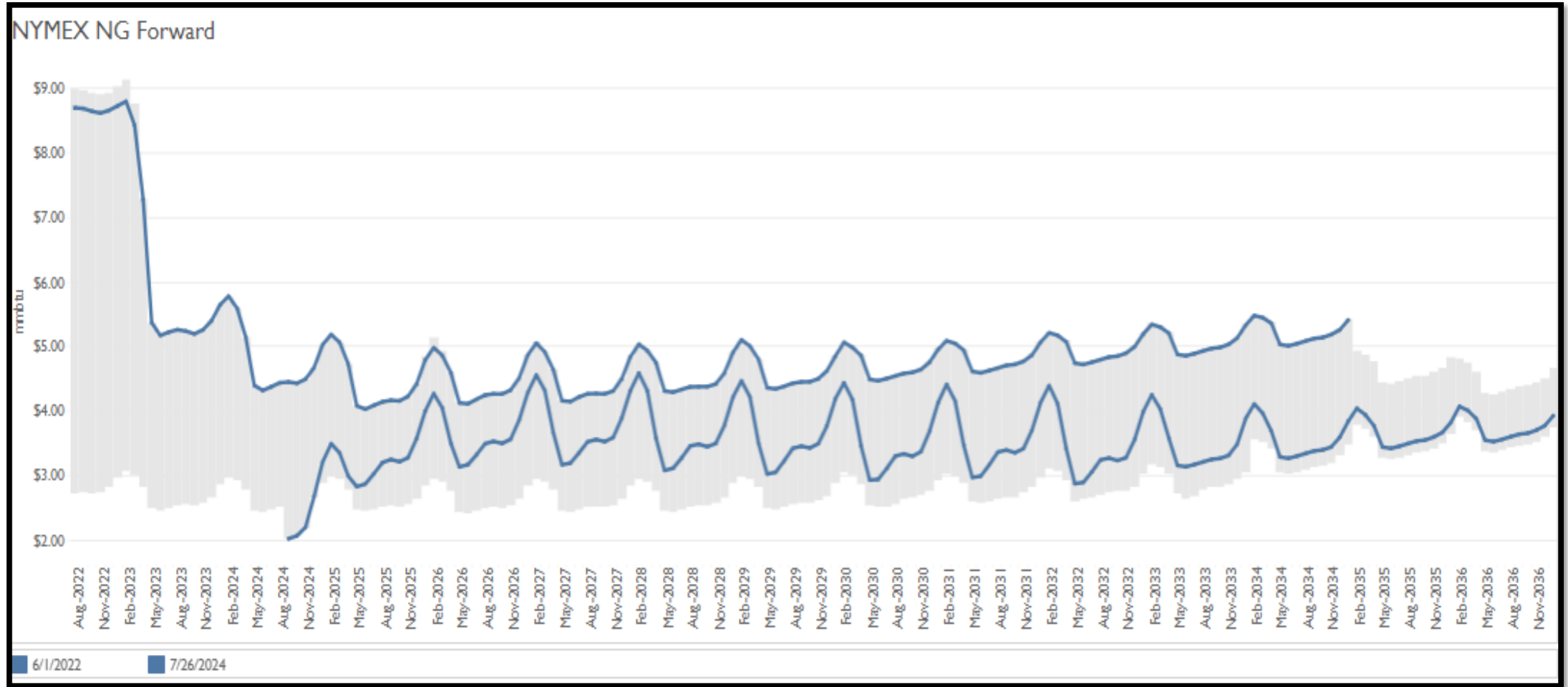
**PLEASE STOP**







# ACTIVITY – THE DATE IS TODAY





# AGENDA

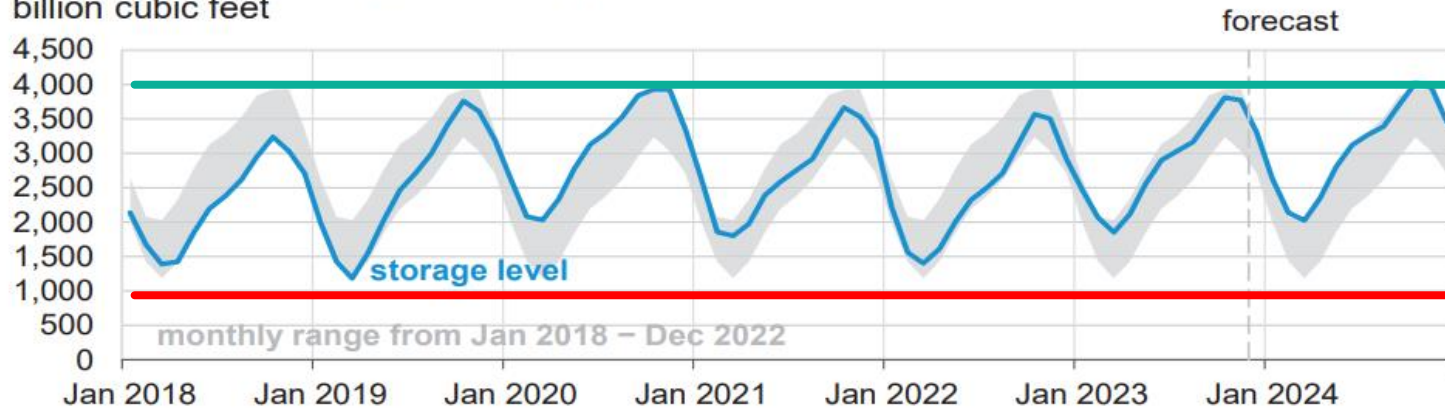
- #NATGAS 101
- RECAP LAST YEAR'S PRESENTATION
- RECENT PRICE ACTION
- A REMINDER OF WHY HURRICANES ARE BEARISH
- WHATS GOING ON NOW?
- OUTLOOK

# #NATGAS 101

# #NATGAS BASICS

- **Historically a closed system with finite full (~4 TCF) and empty (~1 TCF) storage levels**
  - Market **constantly gyrating** between surplus or scarcity pricing scenarios
  - Generally, prices reflect expected value based on supply / demand projections (*e.g. probability-based*)

**U.S. working natural gas in storage**  
billion cubic feet

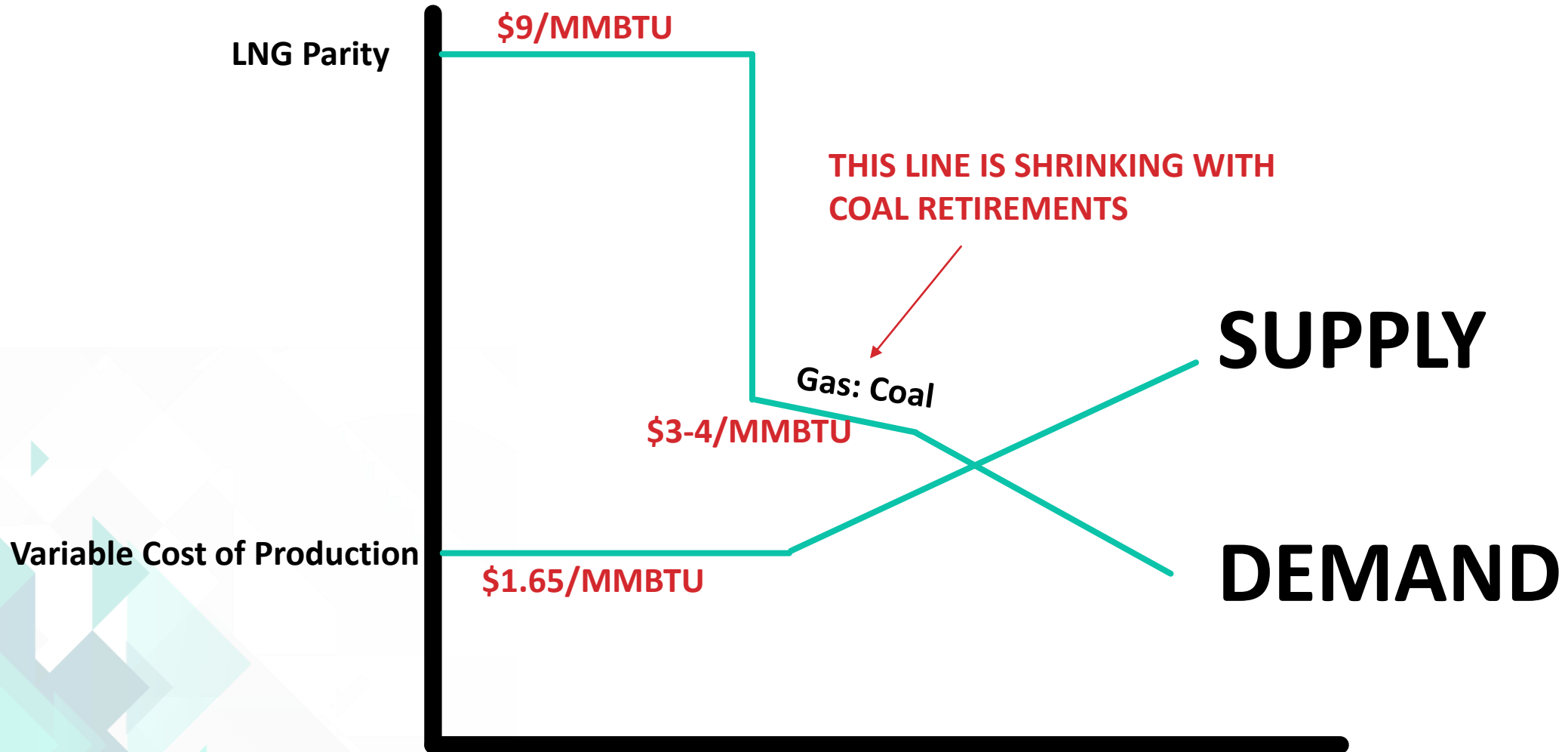


**Surplus** prices down to cash **Costs of Supply**  
(~\$1-1.20 in Marcellus = ~\$1.65 Henry Hub)

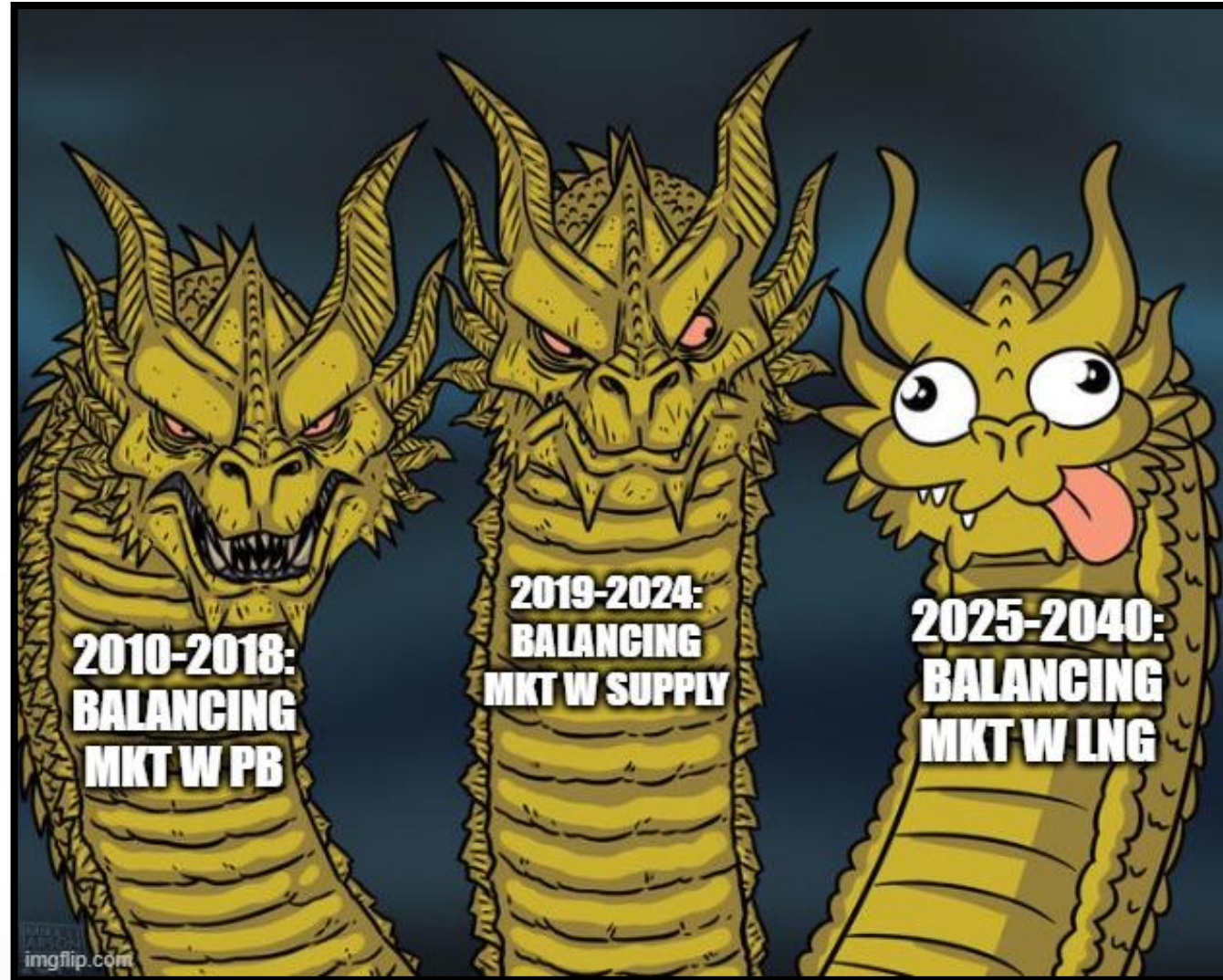
**Scarcity** prices up to **Costs of Demand** needed  
to fix the problem  
(e.g. gas → ~~coal \$3-4~~, LNG exports arb \$9+)

- **Marginal cost of supply and demand matter often in this market**

# THE PRICING MODEL – REFINED

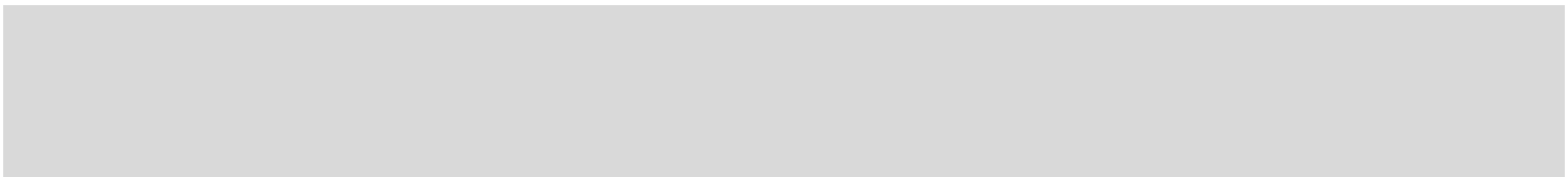


# IT'S GONNA GET WILD

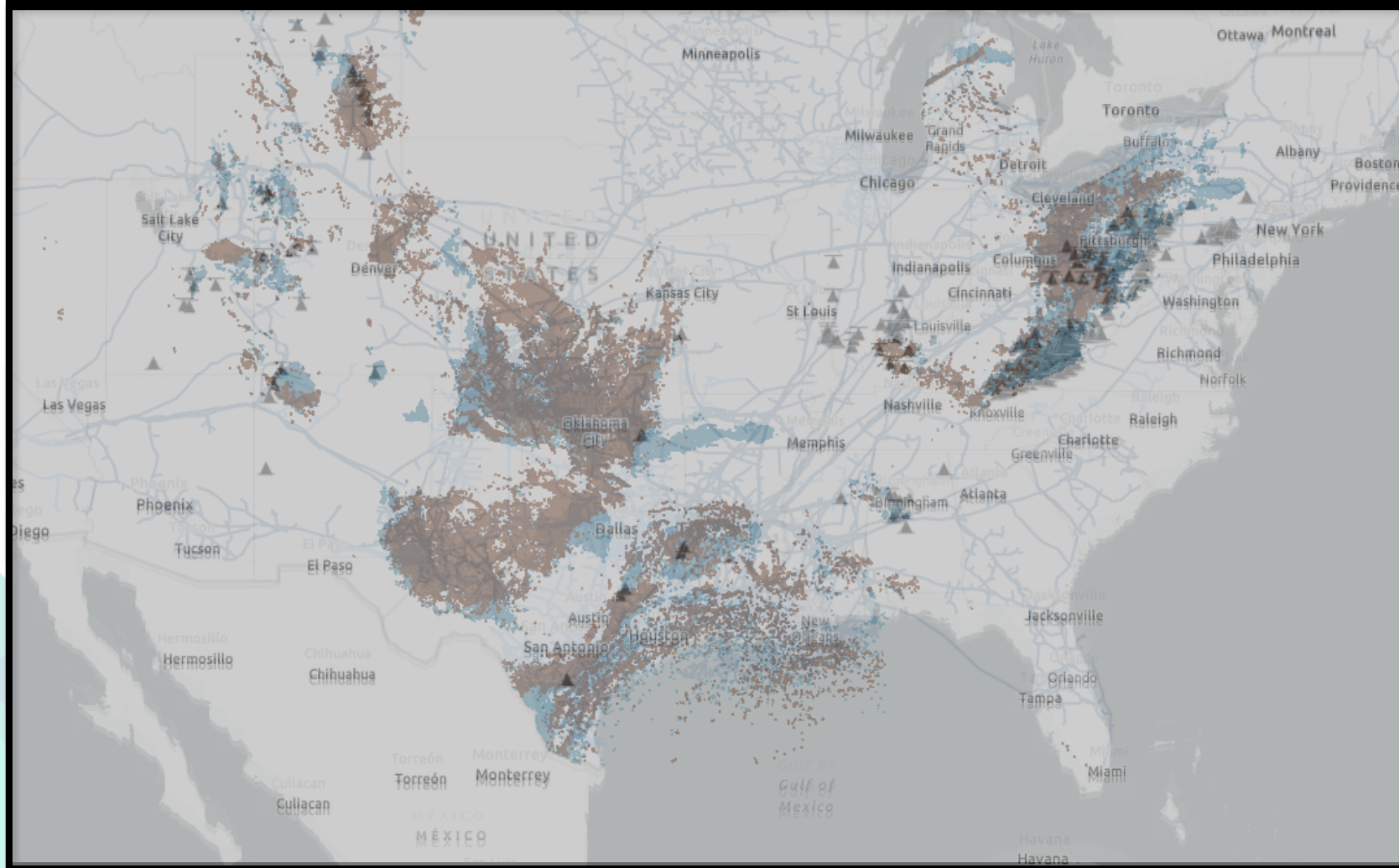


# QUICK RECAP

**SELECT SLIDES FROM LAST YEAR'S CONFERENCE**



# FLORIDA HAS AN ELEVATED RISK PROFILE



1. Where is **your Utility** in this context?
2. Are you playing to your **geographical strengths**?
3. Are you **more exposed** to the commodity or to transportation?
4. Are you focused on managing the **right risks**?

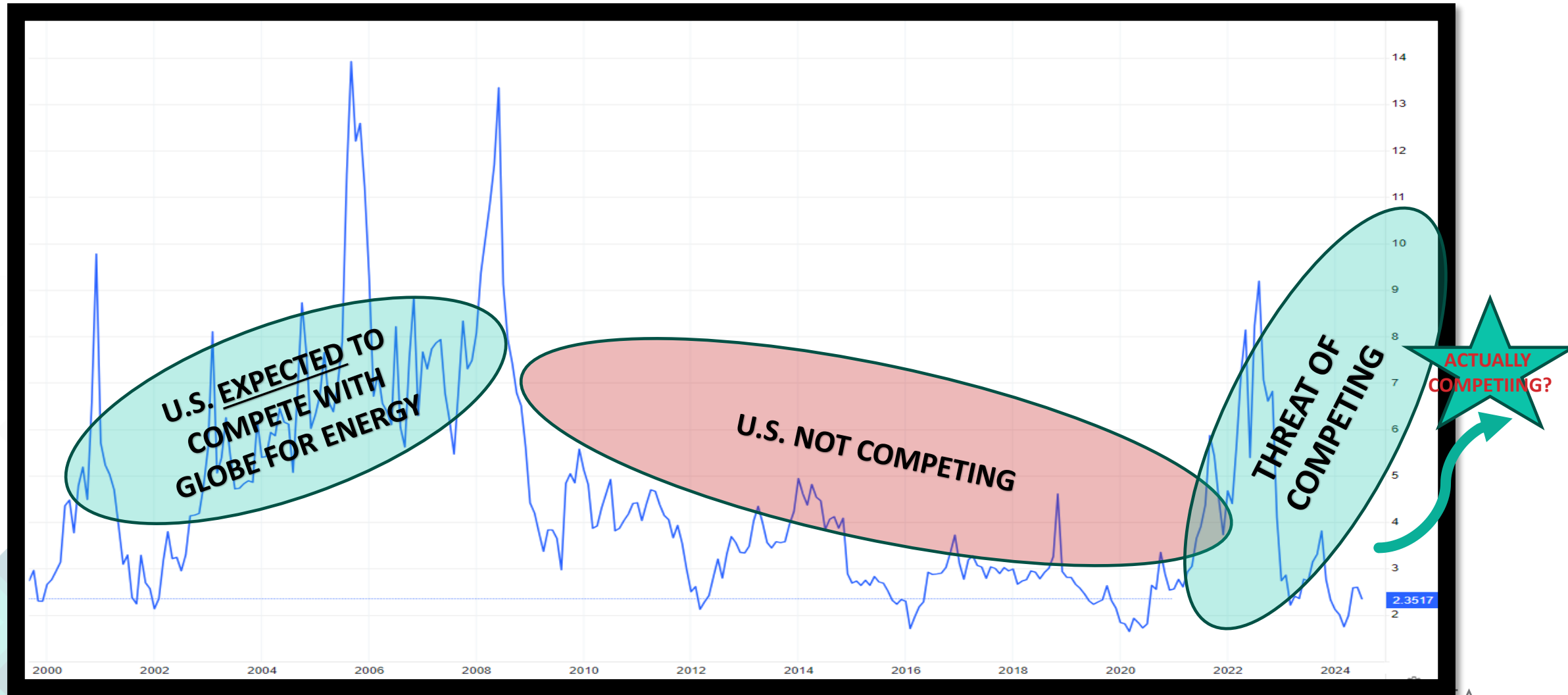
## EXPECT VOLATILITY TO CONTINUE...

- Energy supply chains are tighter than ever as the world transitions from **fuel on the ground** (coal, oil) to **fuel in the pipe** (gas) and **fuel in the sky** (solar / wind)
- Small kinks to **just-in-time supply chains** have amplified price impacts
- The **more exposed you are to spot price**, the **larger a short squeeze** will be
- Coal retirements and LNG exports **amplify** volatility **risk**
- **Government interventions** are becoming **more common** and have a “butterfly effect”
- **Energy producers are consolidating** which equates to **more pricing power**
- **U.S. physical energy storage lags** demand growth (e.g. **gas storage**)

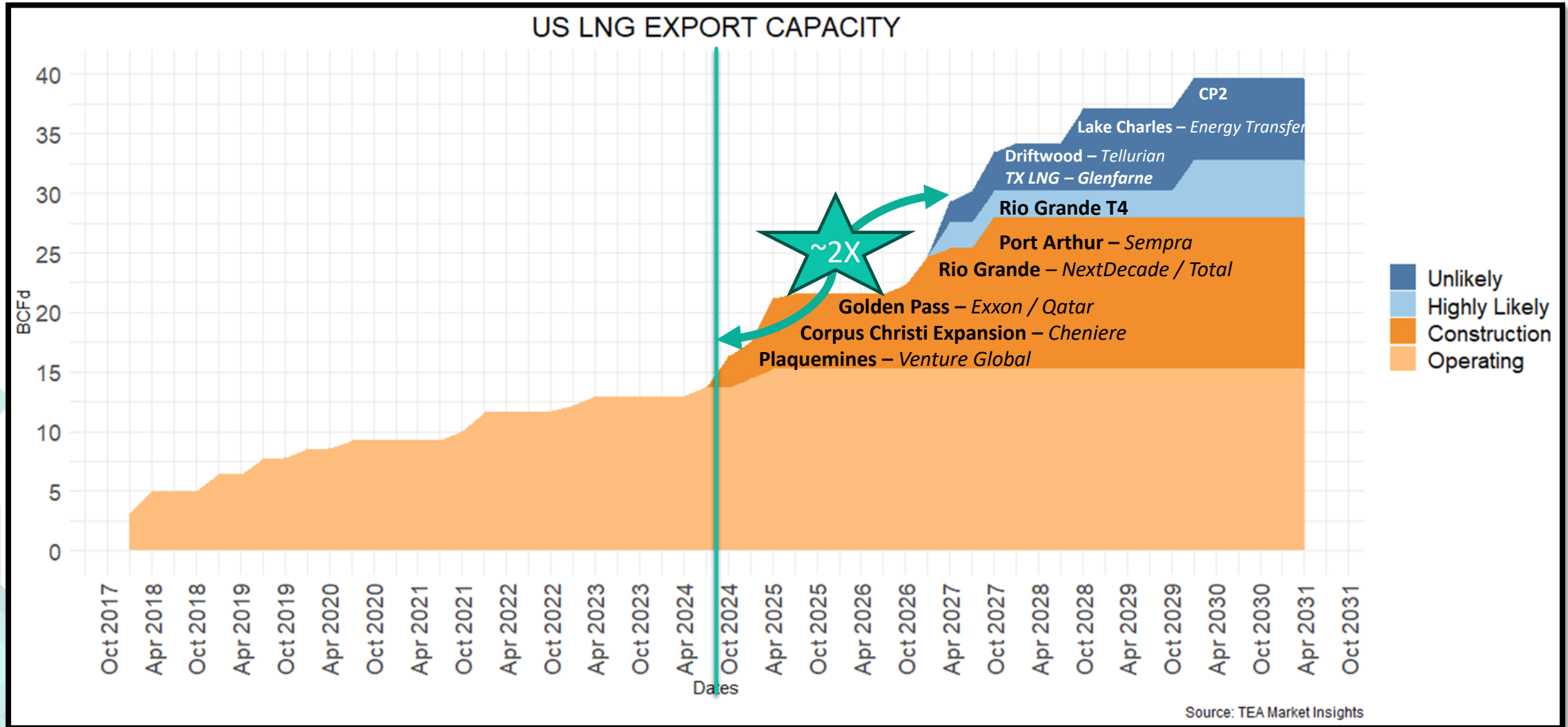


# LONG TERM PRICE TRENDS SIMPLIFY DOWN TO....

Henry Hub prompt month continuation (\$/mmbtu)



# THE THREAT IS REAL

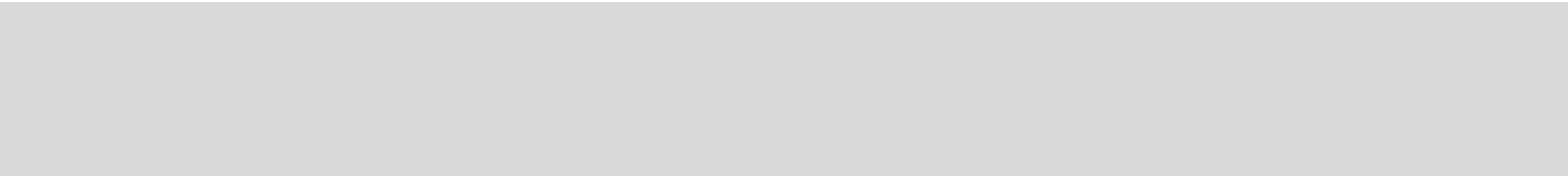


# BULLISH MID-TERM FACTORS

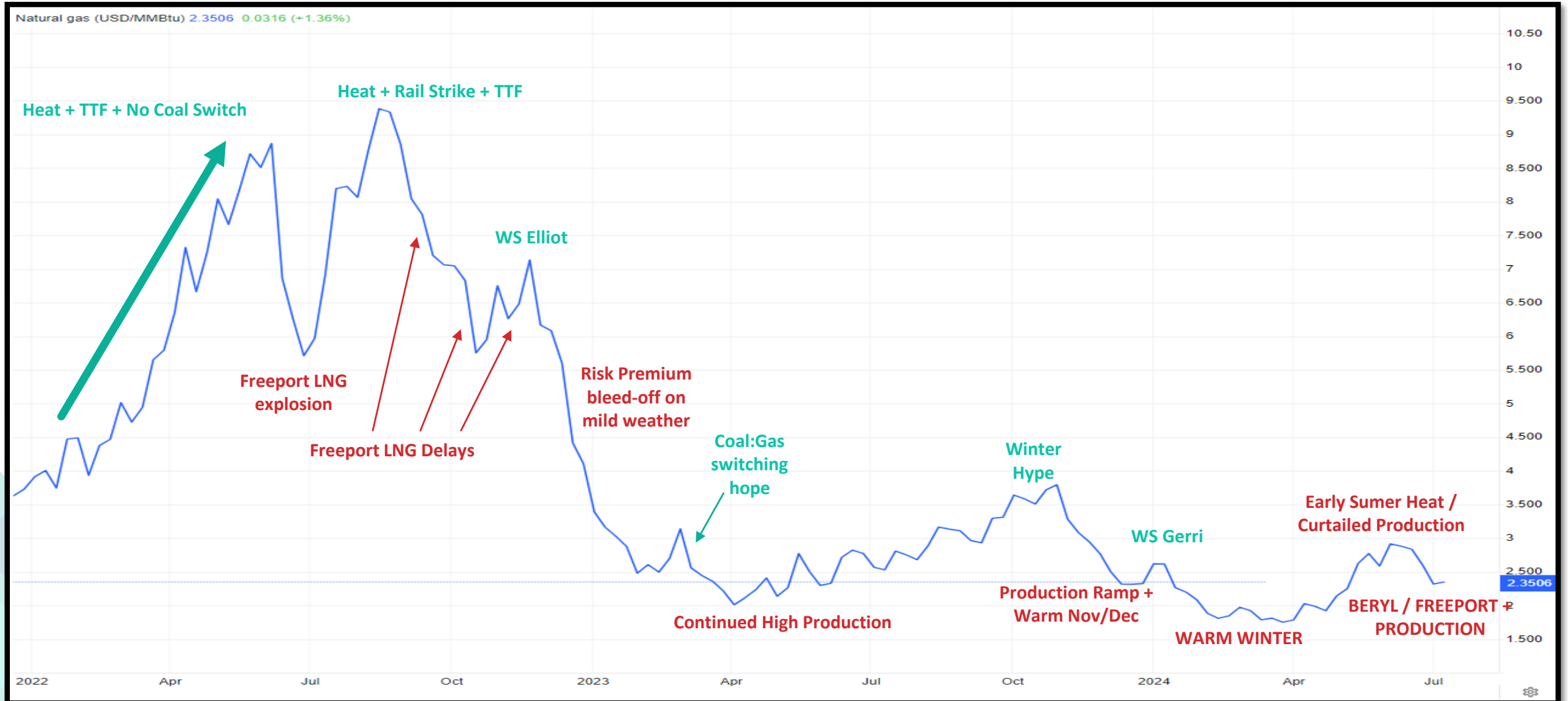
- **LNG** → STILL YUGE DESPIT PERMITTING “PAUSE”
- **CCGT INSTALLMENTS** → IRP’s CONSISTENTLY SOLVE FOR SOLAR + GAS GEN
- **BITCOIN** → \$60K
- **INDUSTRIAL DEMAND** → U.S. RE-SHORING MOMENTUM
- **A.I.** → THE NEW LOAD-RUSH OF 2024?
- **LESS “BREAKTHOUGH” COMPETITION RISK** → SMR’S AND OFFSHORE WIND HAVE BOTH TAKEN RECENT STEPS BACK
- **PRODUCER CONSOLIDATION** INTO THE MOST ACTIVE PRODUCTION MANAGERS OF THE INDUSTRY (CHK / EQT)
- **COAL RETIREMENTS** → 25GW THROUGH 2030

# RECENT PRICE ACTION

## AND WHY



# WHAT HAPPENED THE LAST 32 MONTHS?

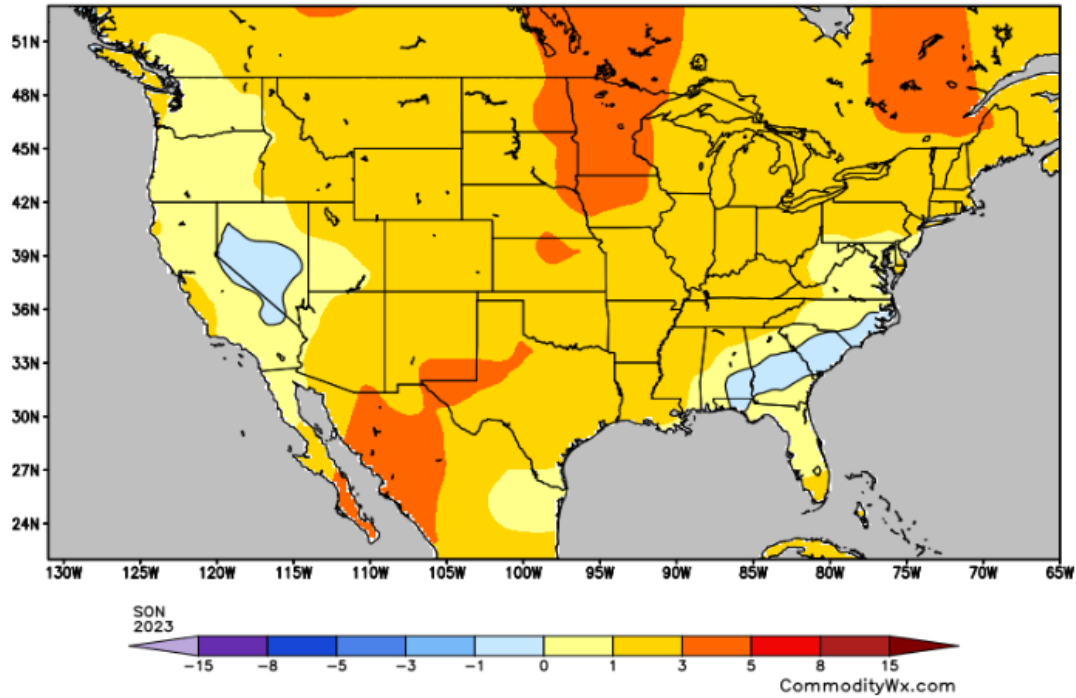




# LAST 2 WINTERS HAVE BEEN A TORCH

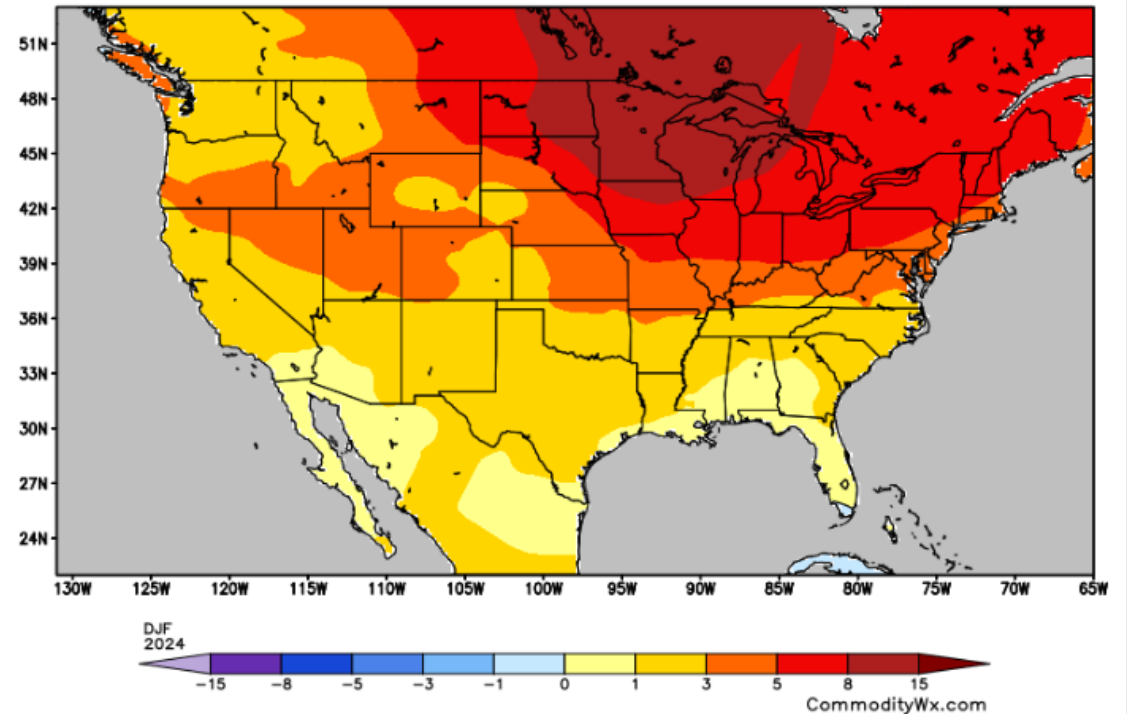
## Dec – Feb 2023

U.S. Station Surface Temperature (°F) anomaly  
(1991–2020 Climatology) Gas HDD: 801 Pop CDD: 328 Elec CDD: 371

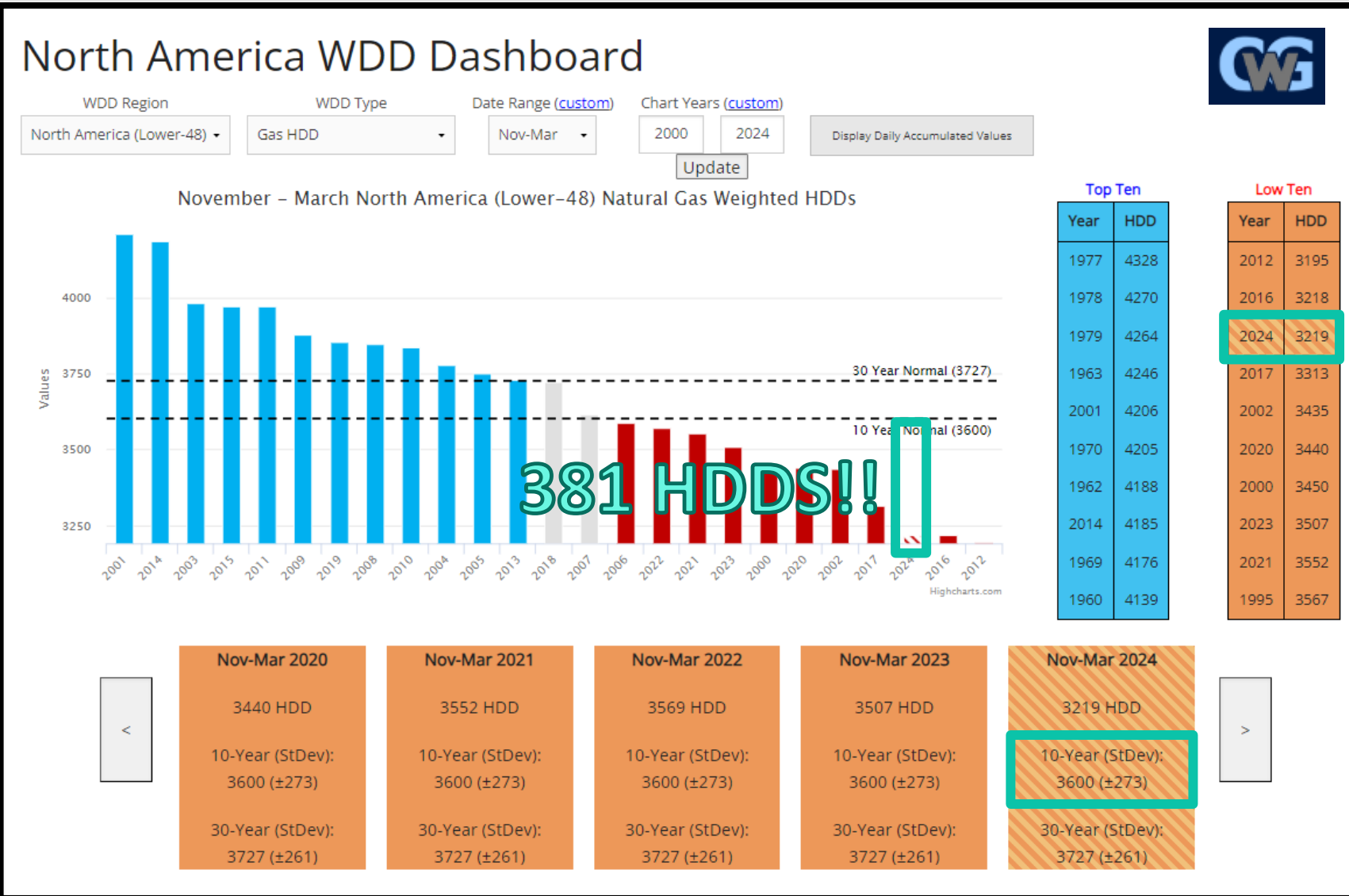


## Dec – Feb 2024

U.S. Station Surface Temperature (°F) anomaly  
(1991–2020 Climatology) Gas HDD: 2203 Pop CDD: 20 Elec CDD: 25



# WINTER WAS A TORCH – 2024 EDITION



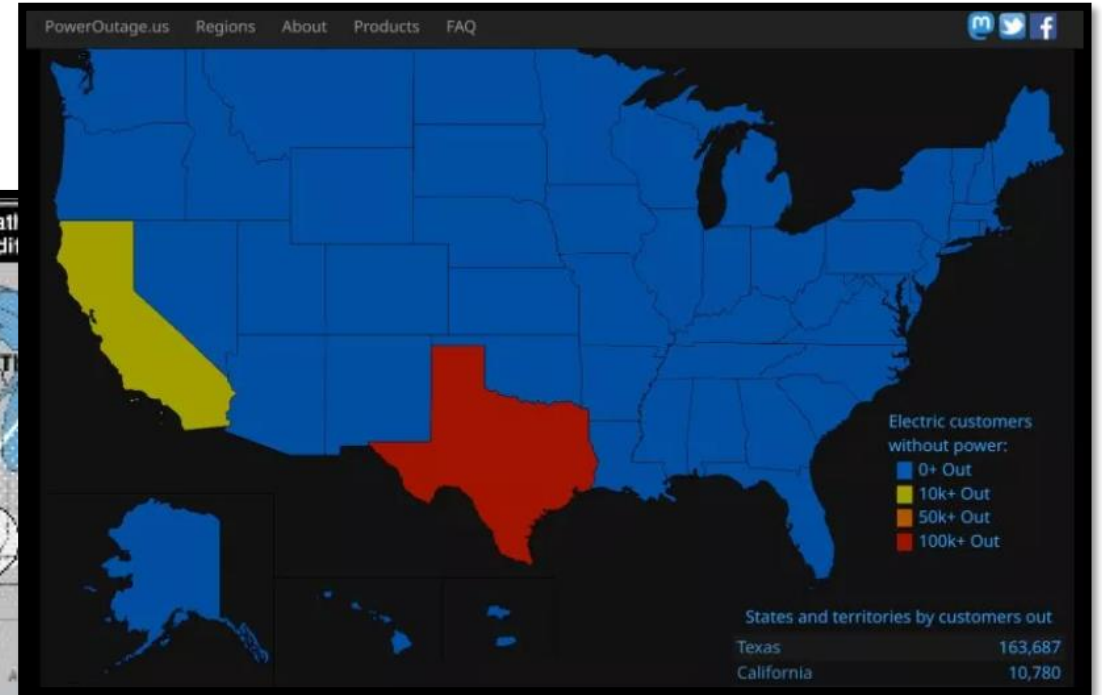
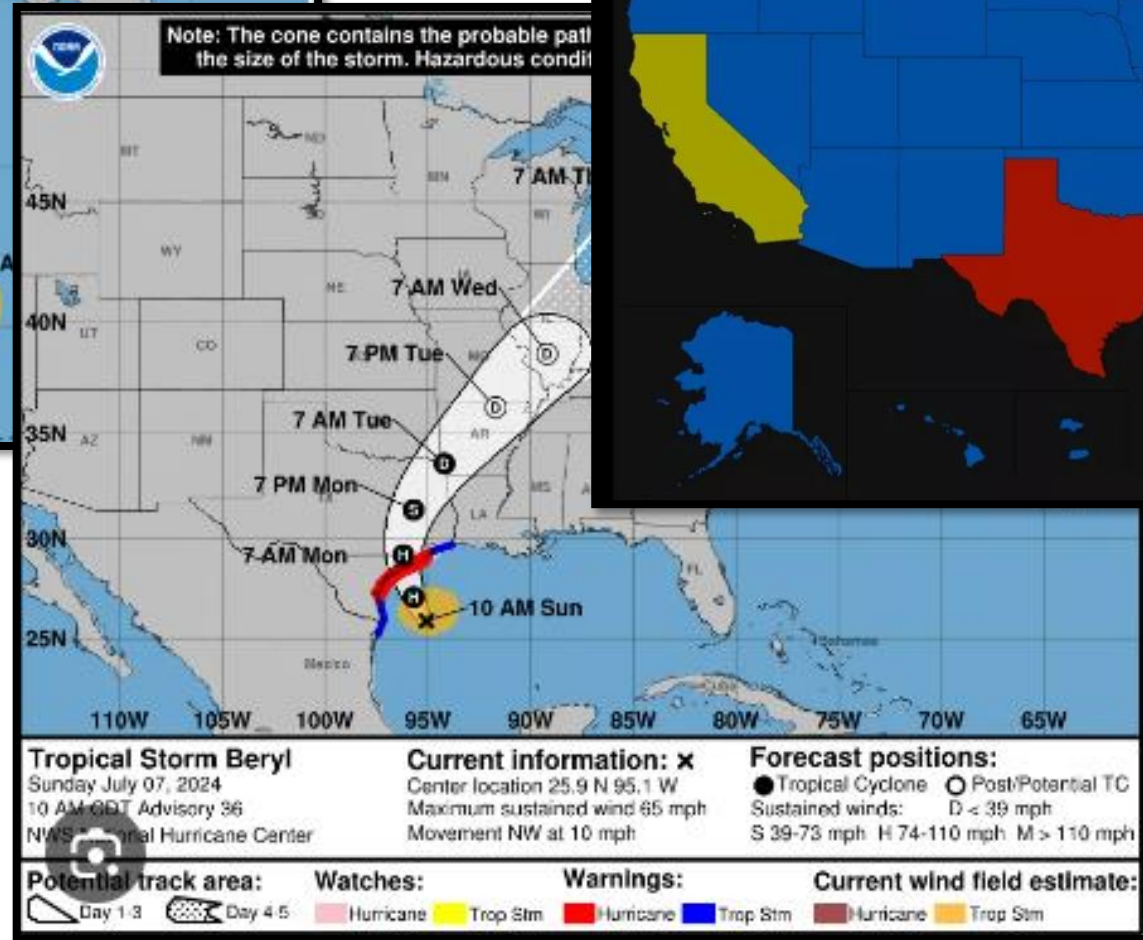
- Winter expected to verify ~3219 HDDs (vs 10yN 3600)
- > 1 std deviation bearish Winter
- 381 HDDS → 762 BCF of gas not consumed



# WINTER BLOWTORCH



# OF COURSE BERYL HITS FREEPORT



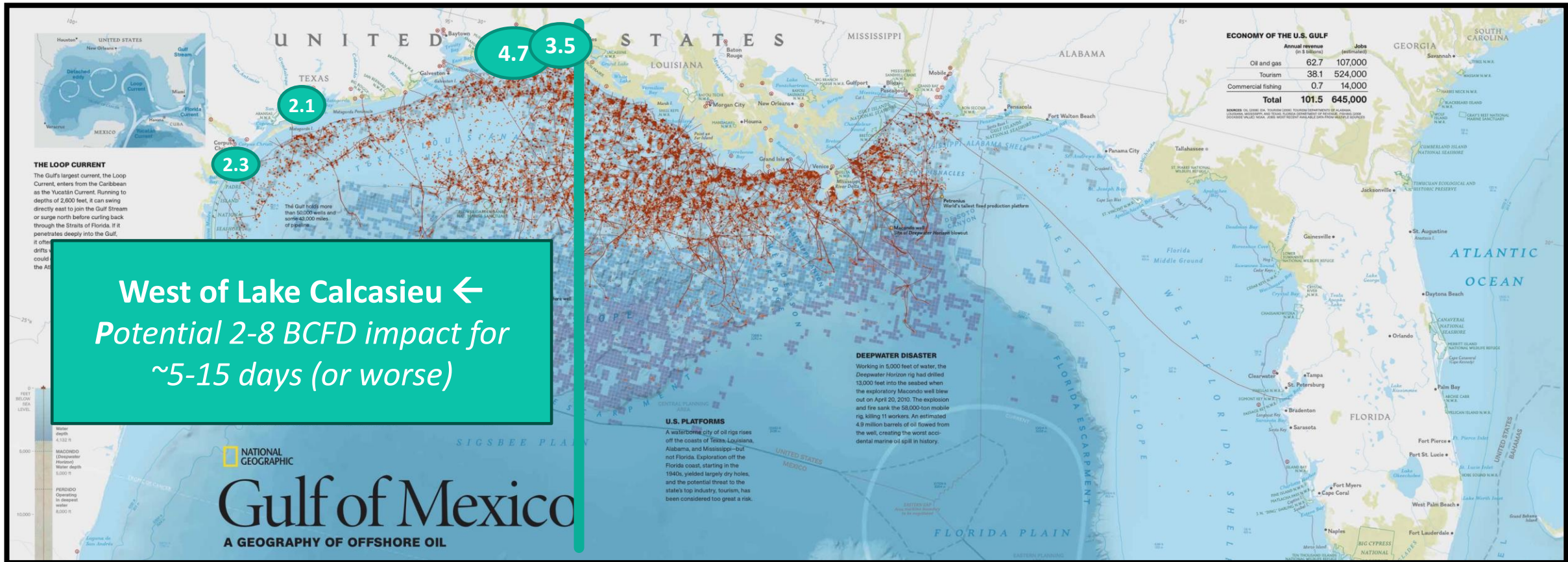
# FREEPORT MANAGEMENT RN



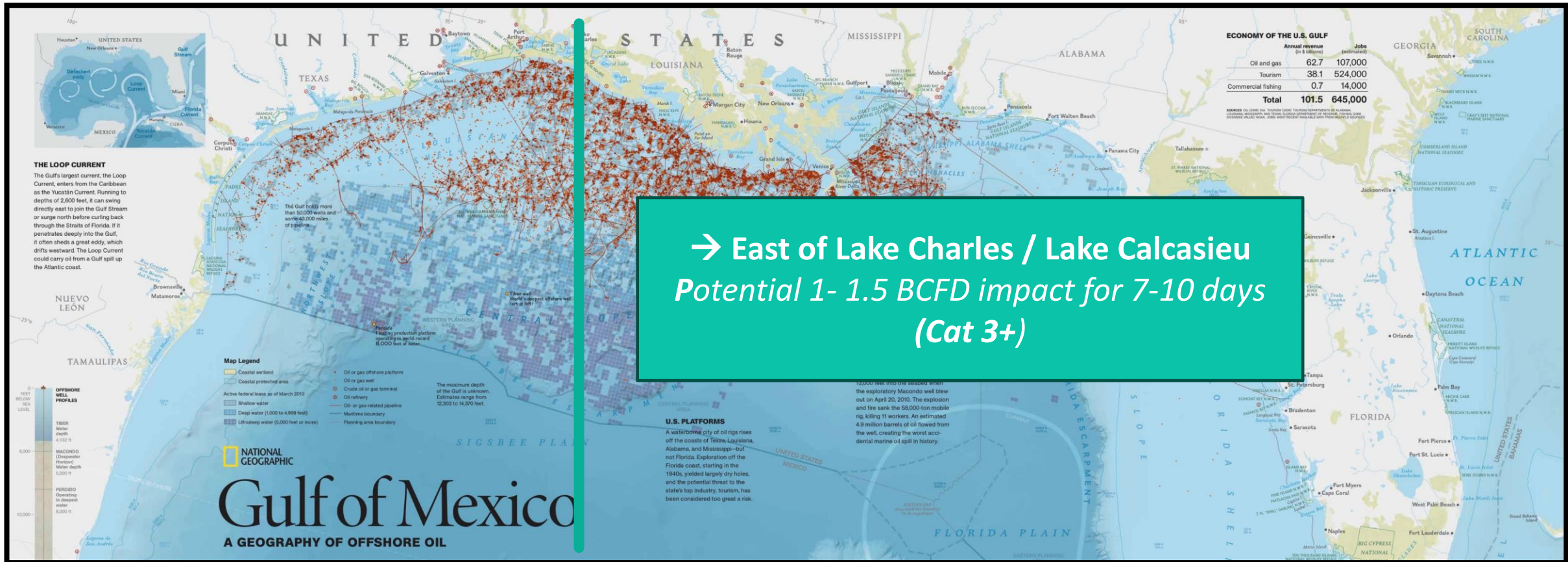
# HURRICANES ARE BEARISH

**DUH**

# HURRICANES LEFT OF THE "LAKE CALCASIEU LINE" ARE BEARISH

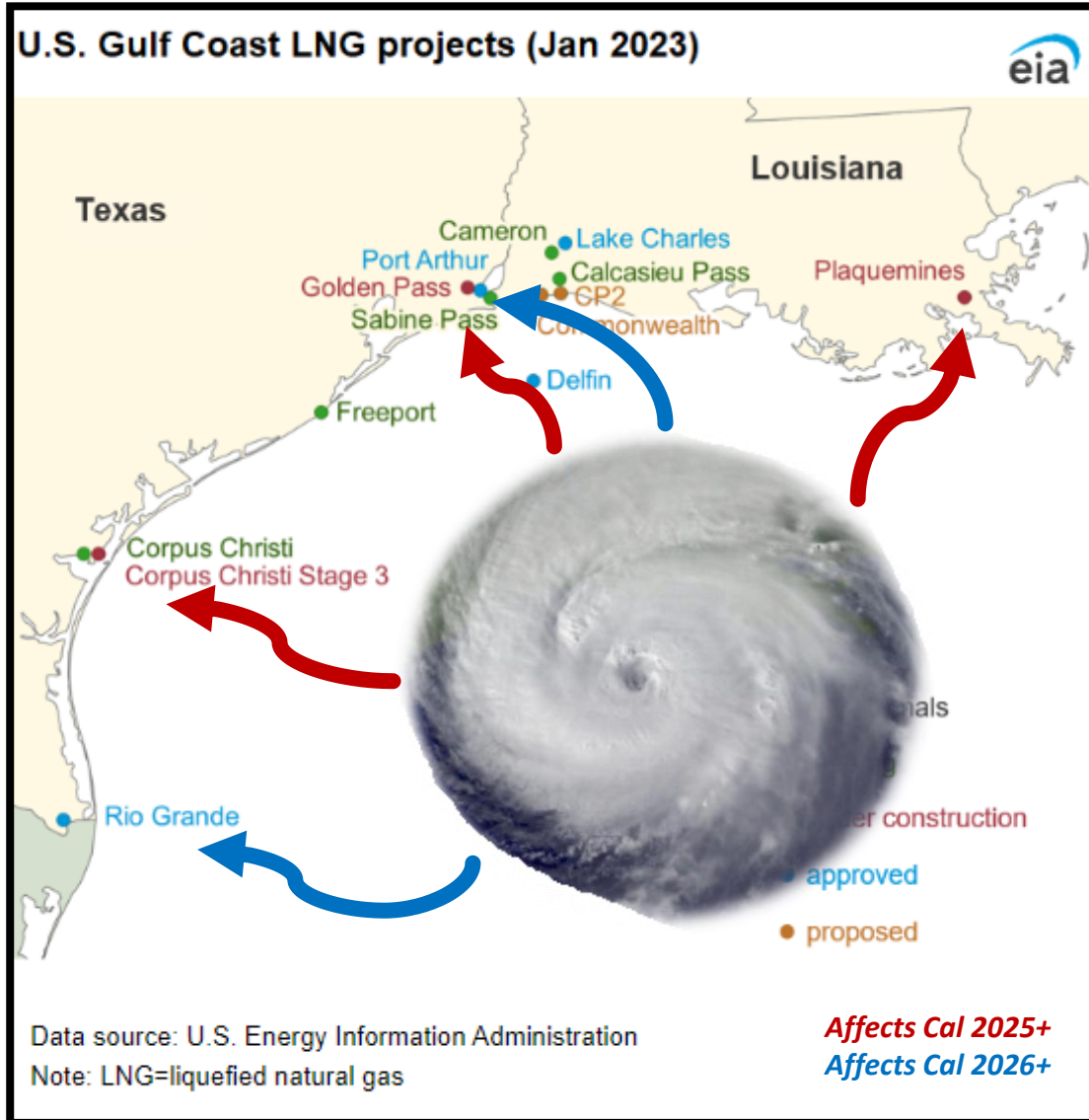


# HURRICANES LEFT OF THE "LAKE CALCASIEU LINE" ARE BEARISH



→ East of Lake Charles / Lake Calcasieu  
Potential 1- 1.5 BCFD impact for 7-10 days  
(Cat 3+)

# 3 MAJOR LNG FACILITIES CURRENTLY UNDER CONSTRUCTION



- LNG construction has a history of being delayed by storms

## RAIN DELAY: Harvey-related delays push back Freeport LNG construction

By Erinn Callahan [erinn.callahan@thefacts.com](mailto:erinn.callahan@thefacts.com) May 10, 2018

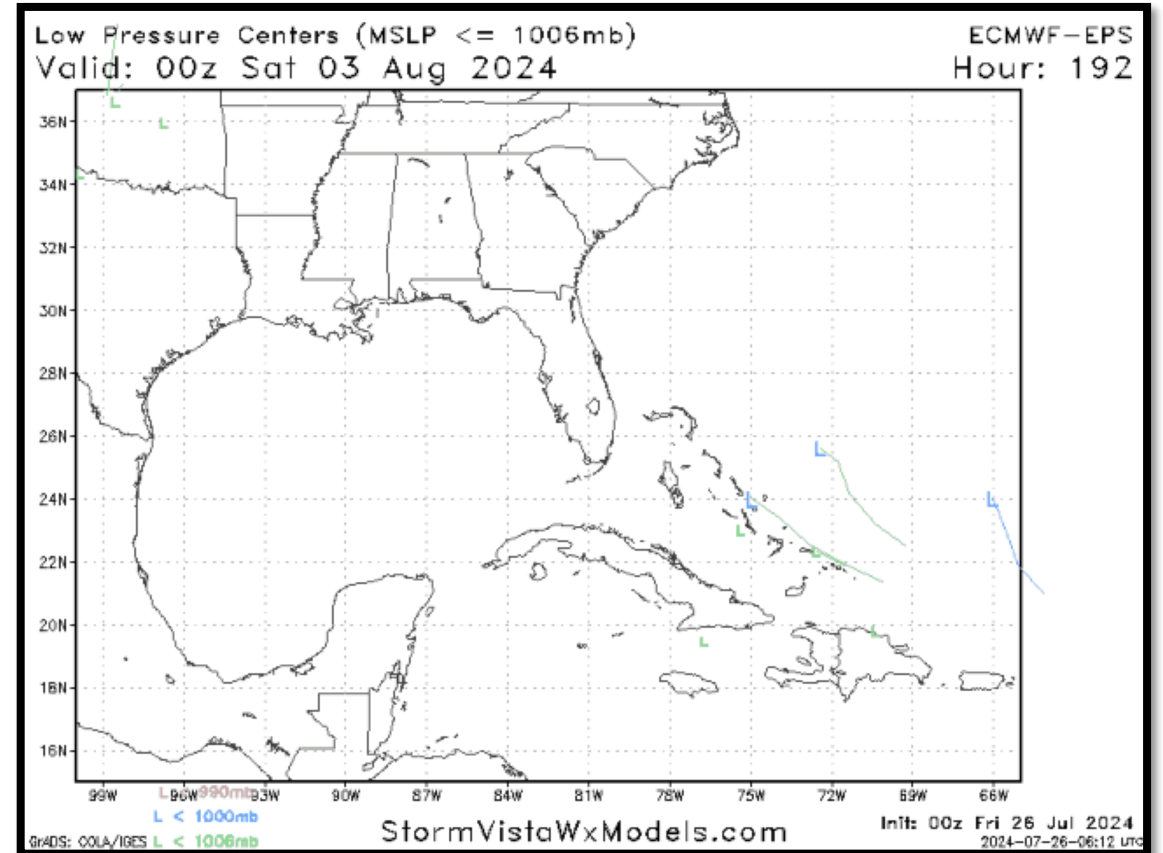
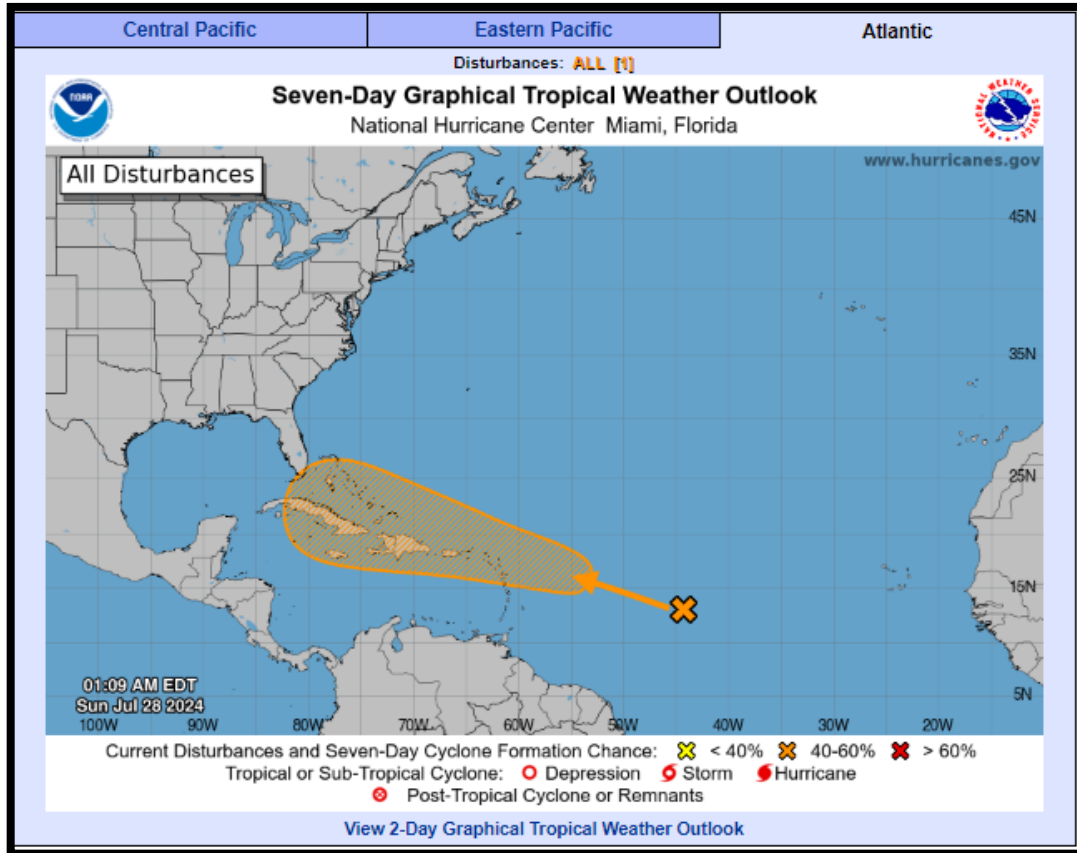
**QUINTANA** — Despite roughly nine-month delays stemming from Hurricane Harvey, Freeport LNG officials still expect all three new processing units to be in full operation within the next two years.

Company officials announced last month the engineering, procurement and construction contractor has pushed back the expected commercial start date for the export terminal's first train to Sept. 1, 2019, instead of late this year as previously targeted, according to an April 18 S&P Global Platts article.

"We do have an updated schedule, but we still expect the first three trains to be up and operational by the end of 2020," Freeport LNG spokeswoman Wendy Mazurkiewicz said.

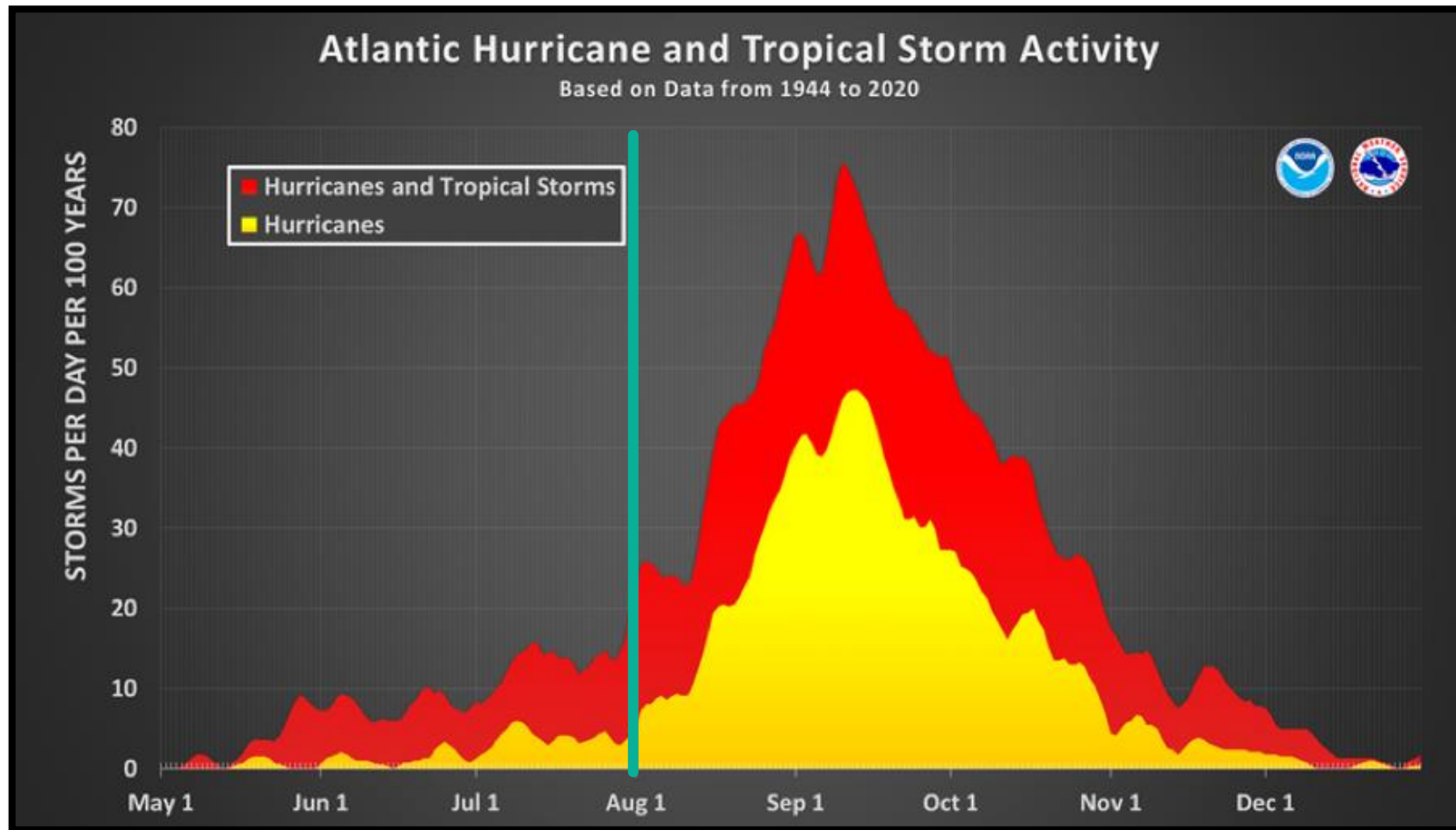
- Cal 2024 gas market would see a **significant decline** if construction impacted

# ONE POTENTIAL STORM BREWING... AT THE MOMENT



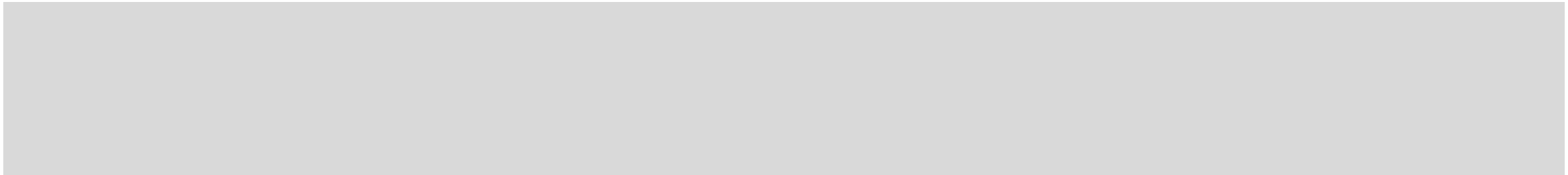


# CURRENTLY RAMPING INTO PEAK STORM SEASON

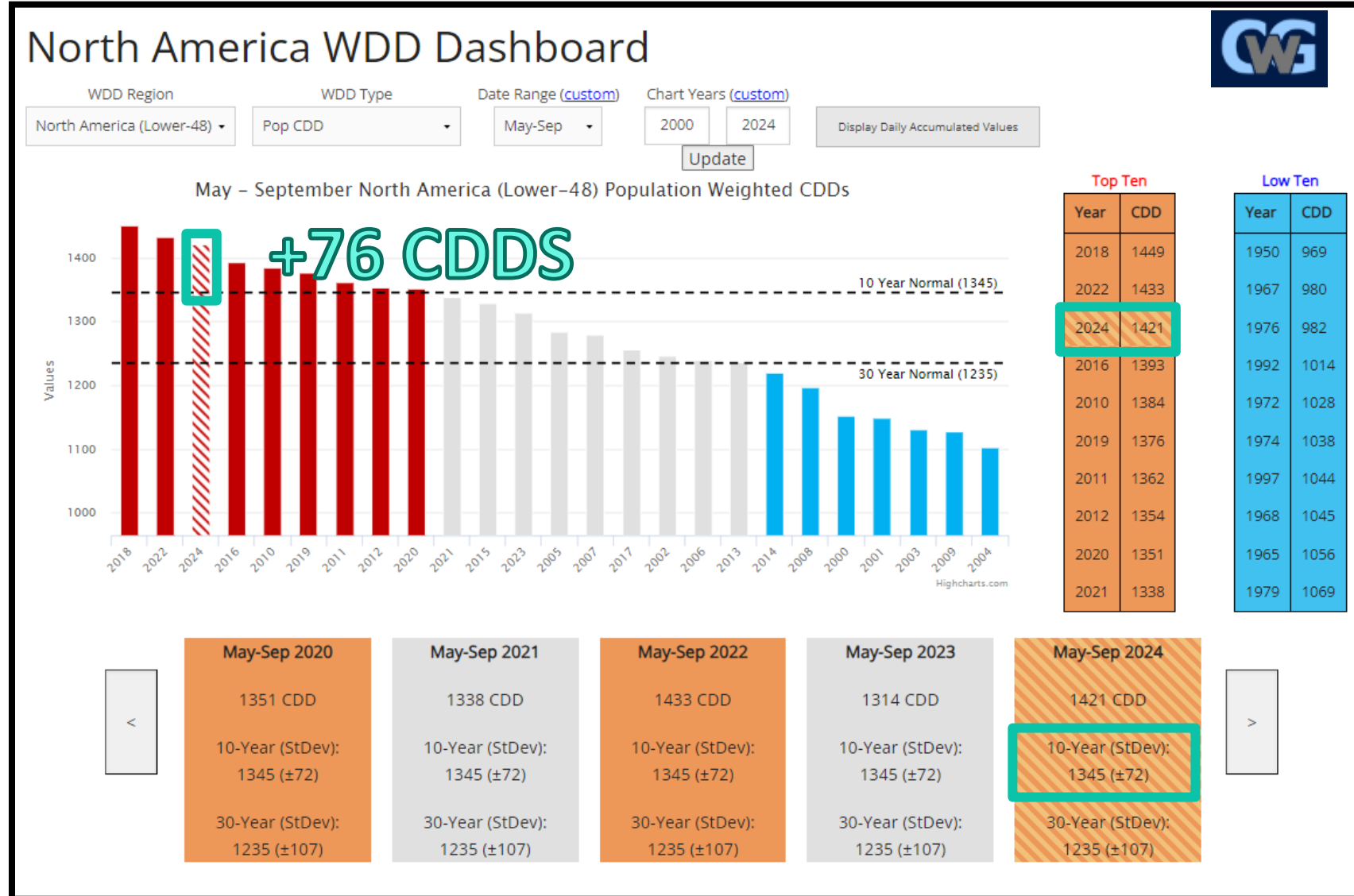


# WHAT'S HAPPENING THIS SUMMER?

## WEATHER



# SUMMER IS RUNNING HOT...



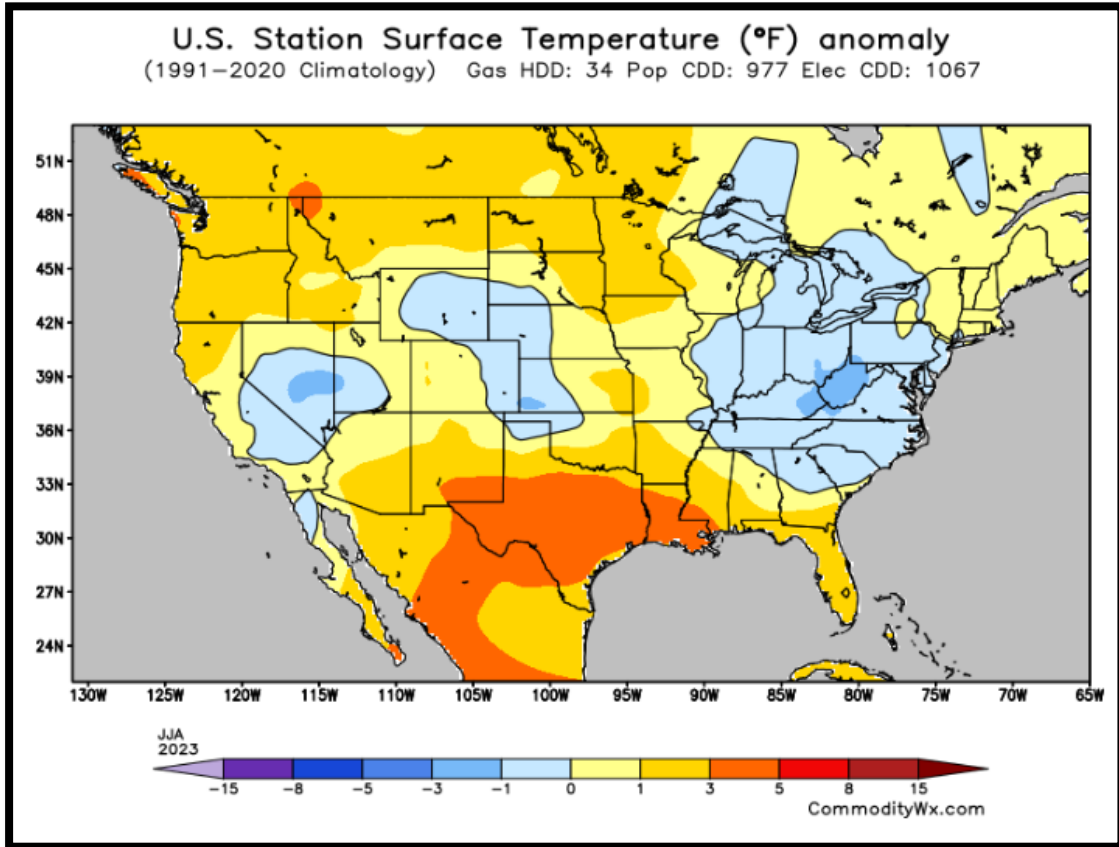
- **SUMMER expected to verify ~1420 CDDs (vs 10yN 1345)**
- **+ 1 std deviation BULLISH Summer**

# THAT'S BULLISH GAS RIGHT????

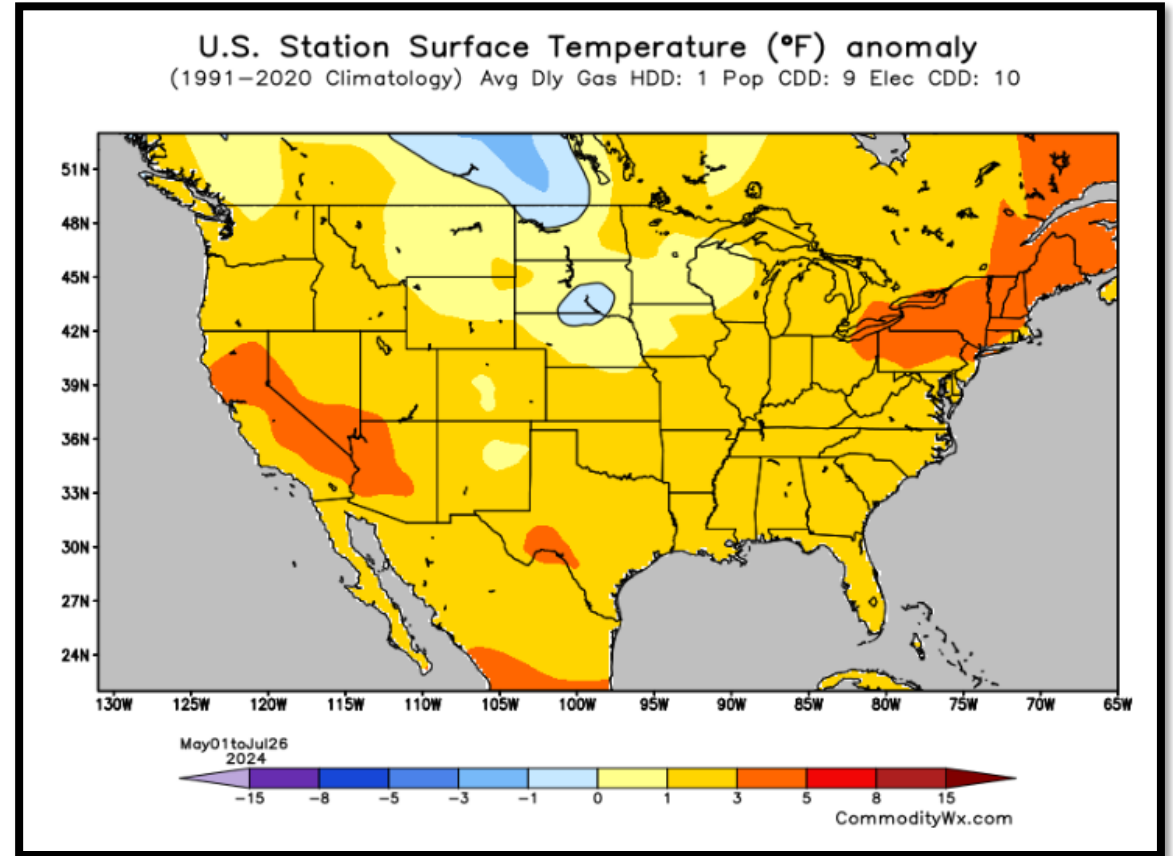


# BUT NOT HOT IN TEXAS...

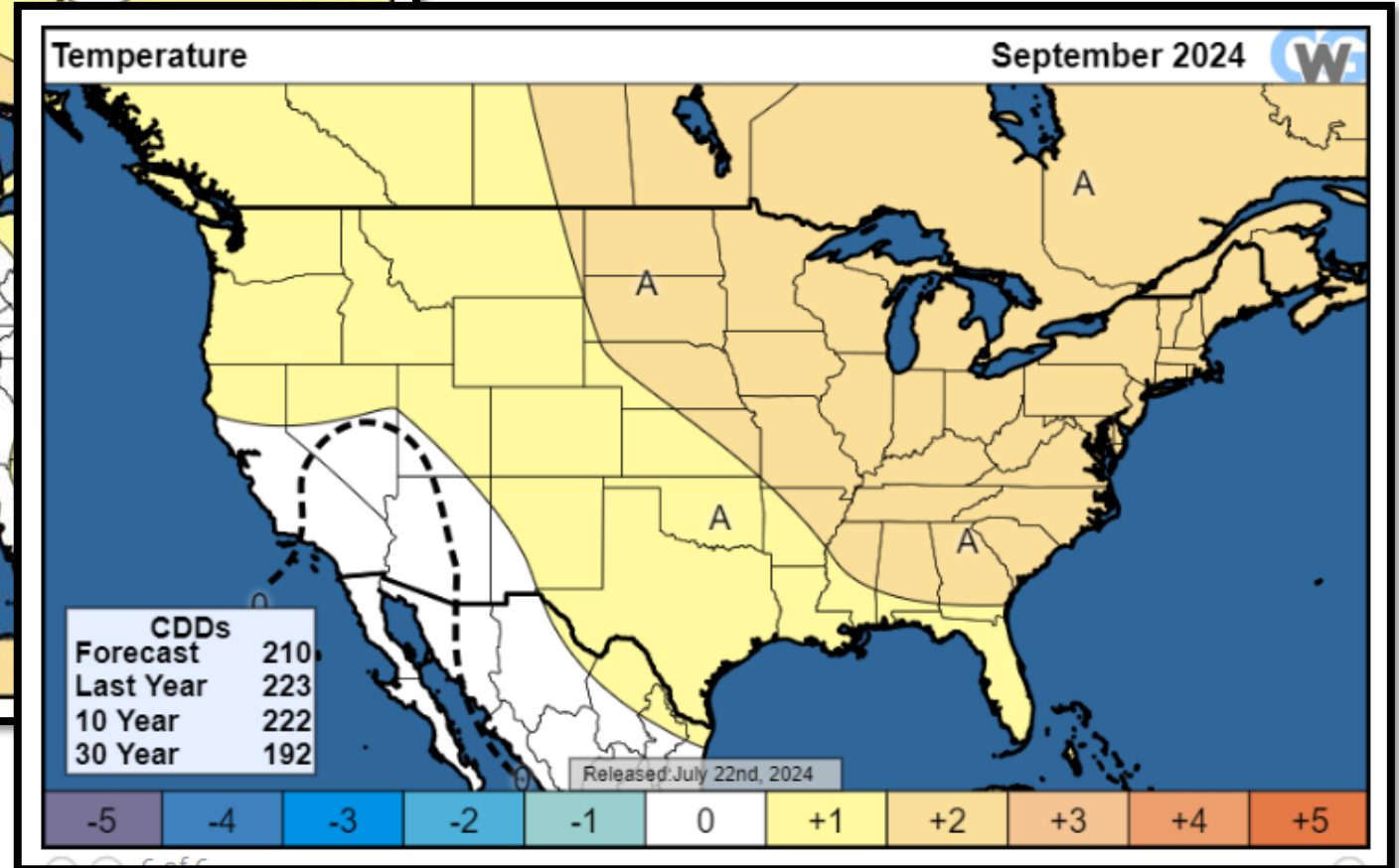
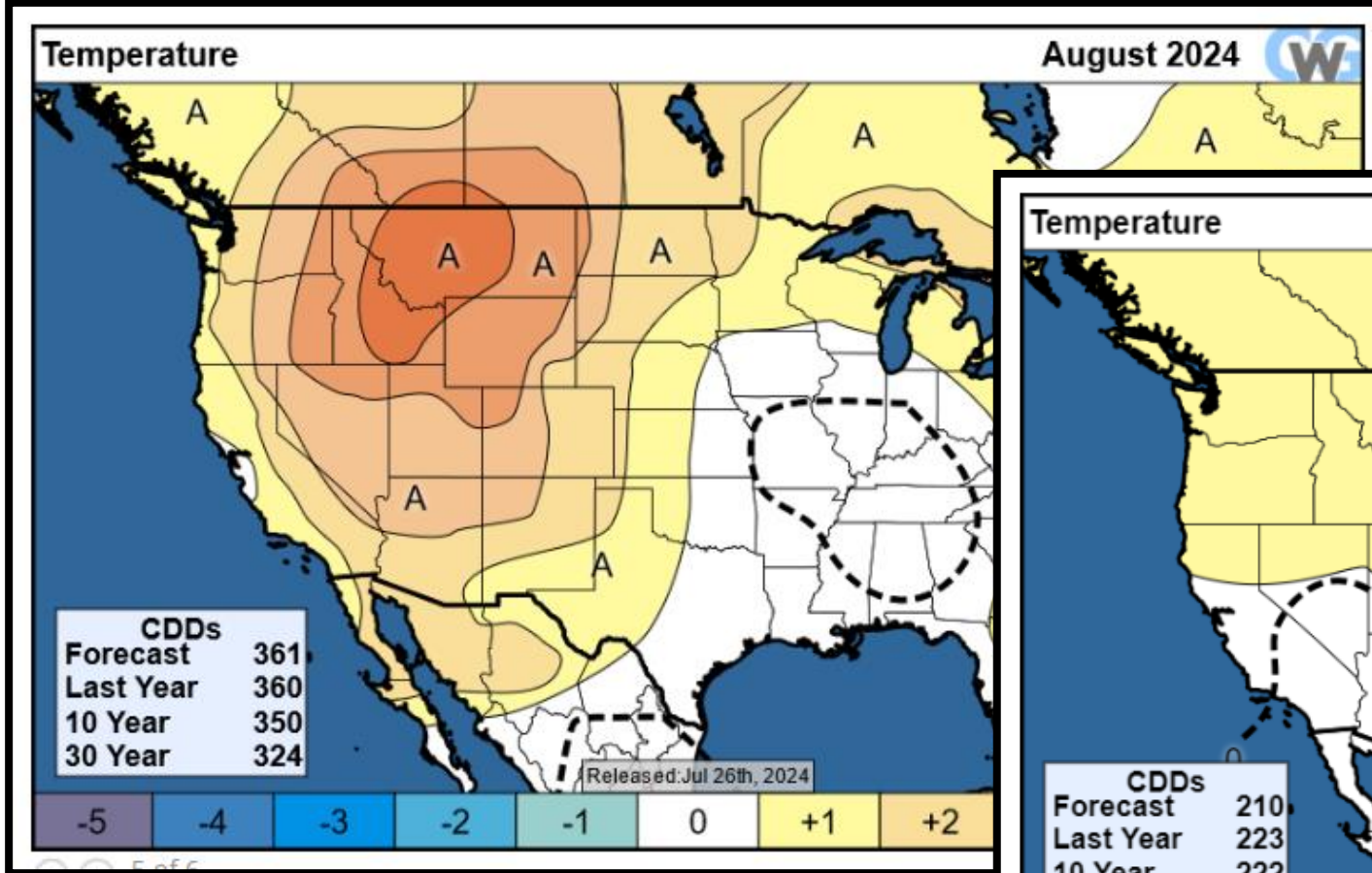
## SUMMER 2023



## SUMMER TO DATE 2024



# WESTERN HEAT TO REMAIN... EXPECT A WARM SEPTEMBER

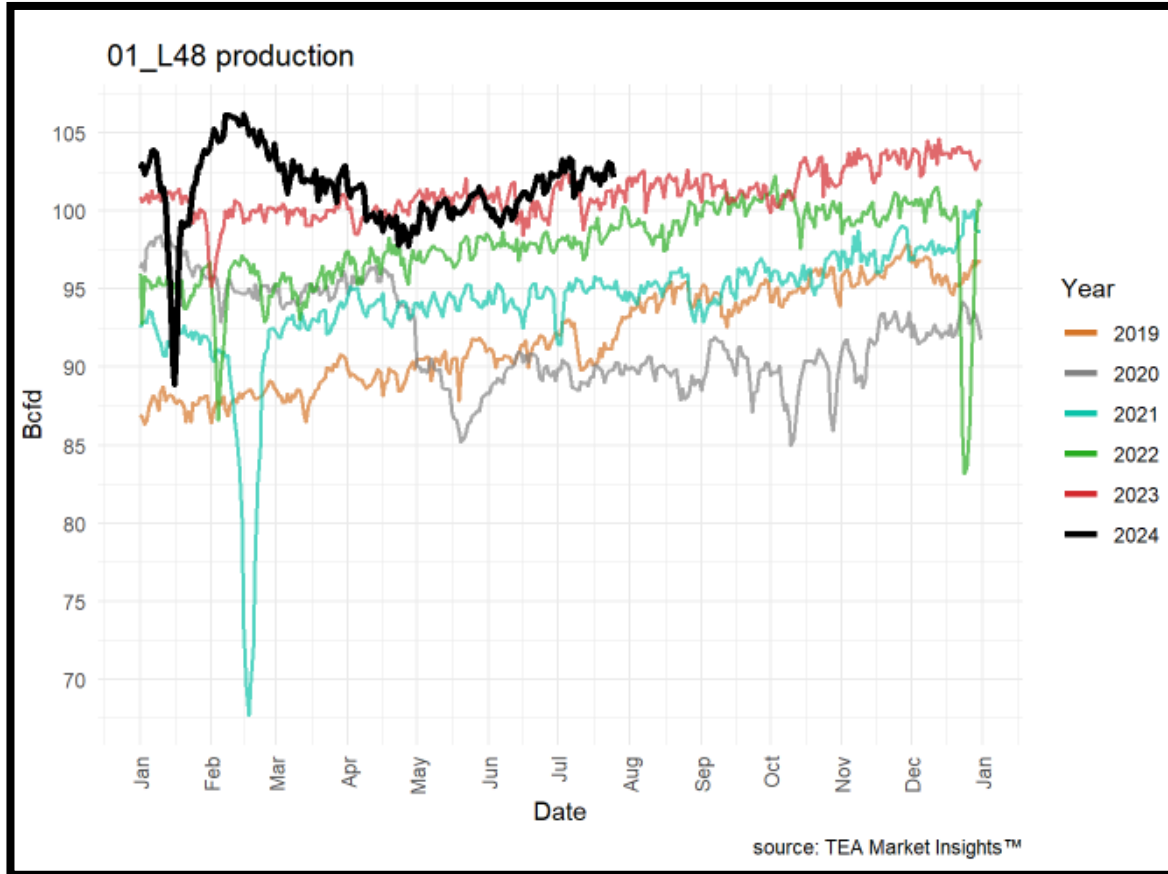


# WHAT'S HAPPENING THIS SUMMER?

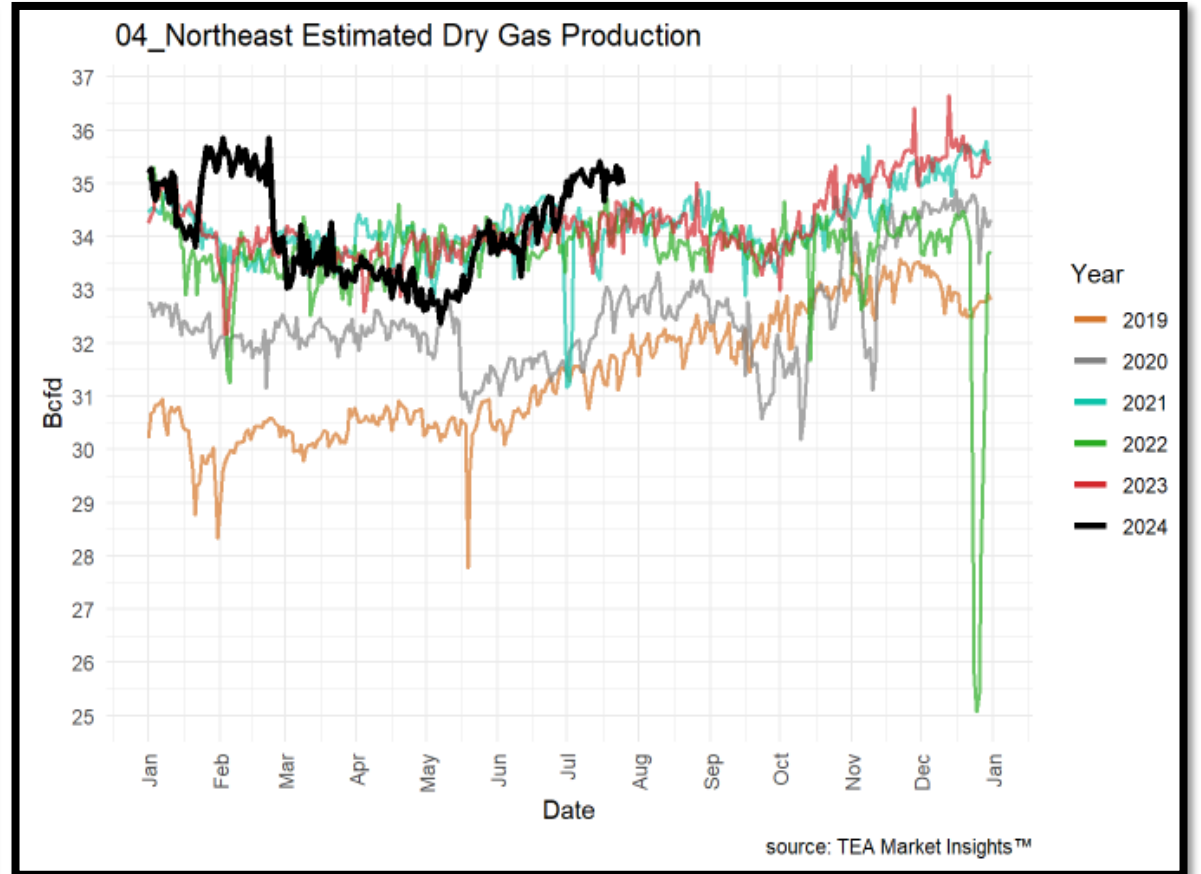
## DEEP DIVE IN SCRAPE MODELS

# WHAT ARE THE SCRAPES TELLING US?

Production is back on the rise...



Led by Marcellus with MVP online...



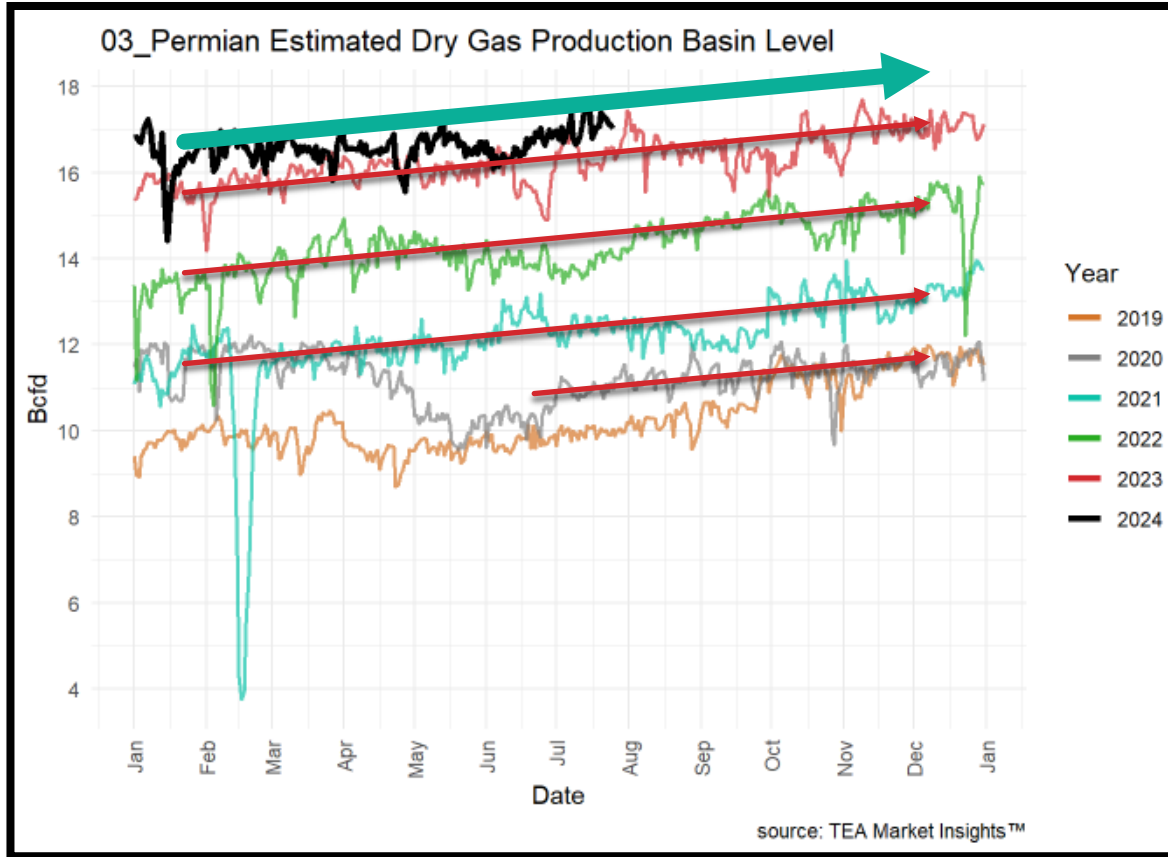


# GASSY PRODUCERS RN

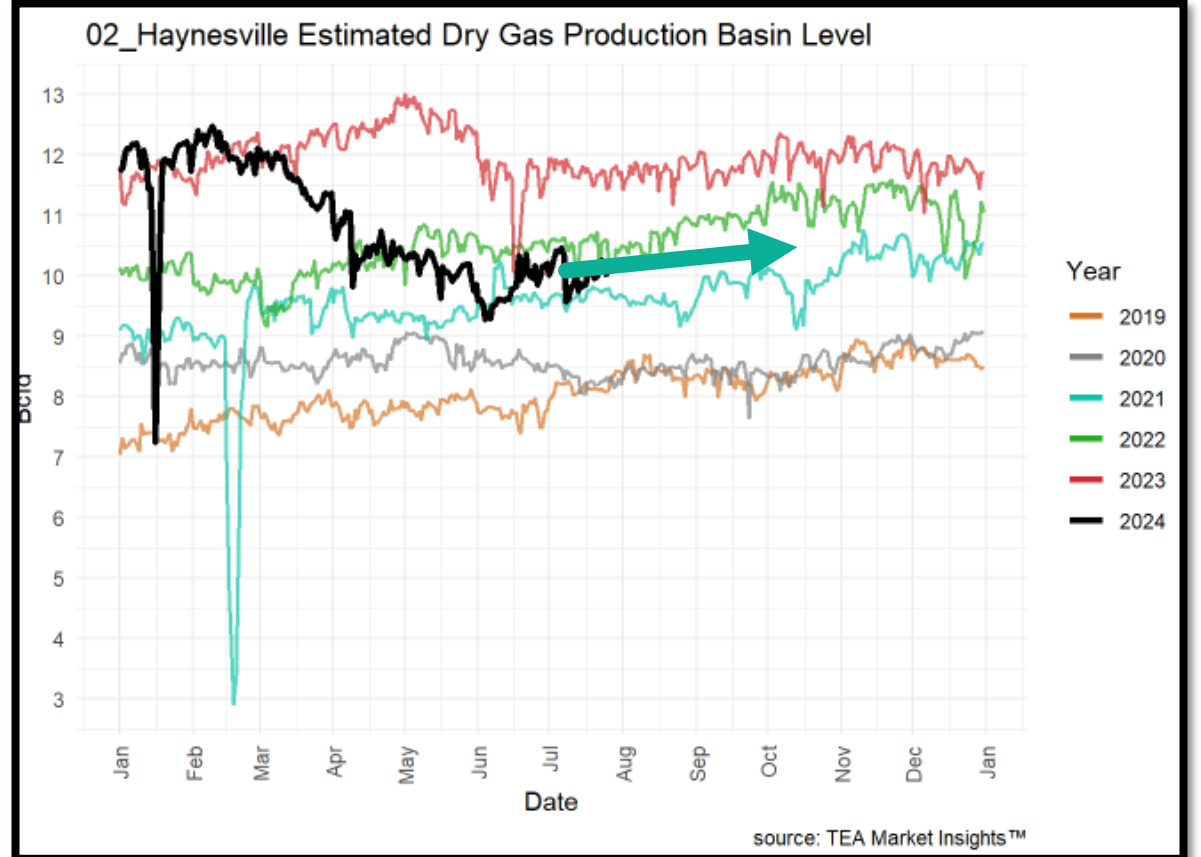


# IT WAS THE BEST OF TIMES... IT WAS THE WORST OF TIMES

Permian growing at same rate as prior years...



Haynesville bottoming...

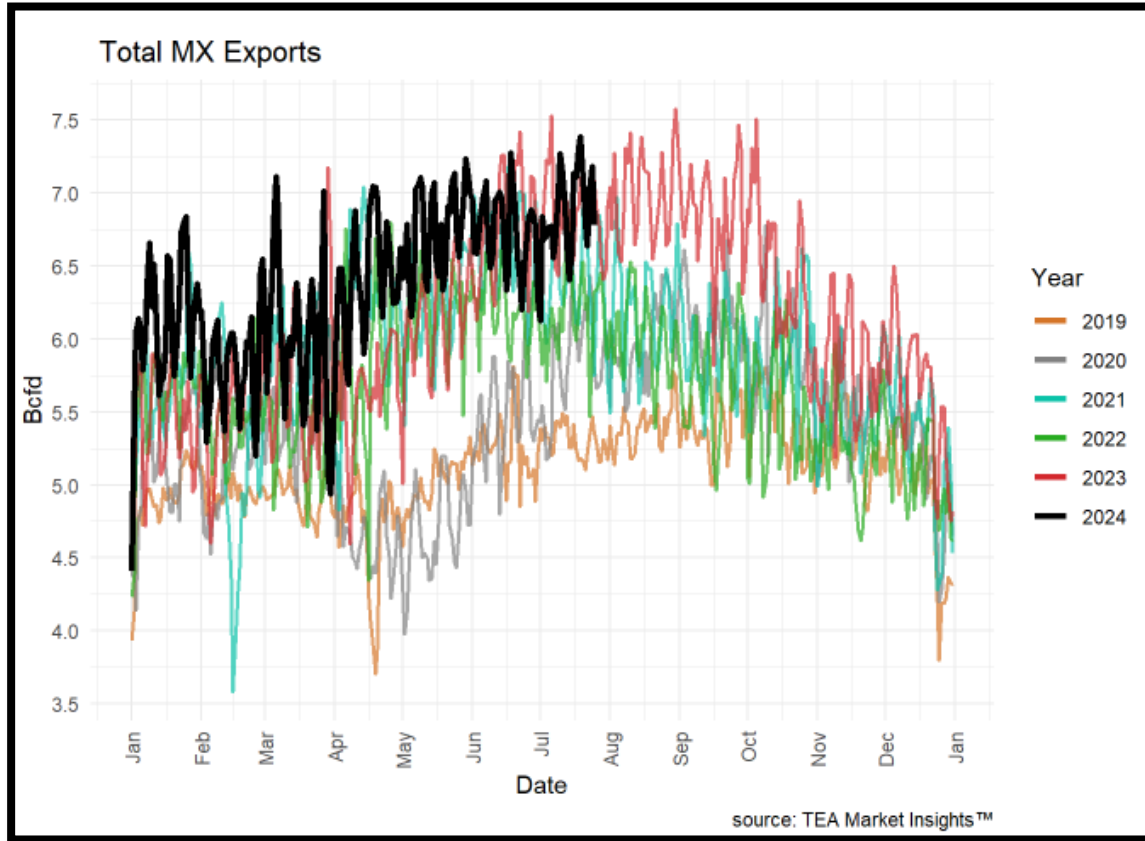


AND THEN WE HAVE THIS...

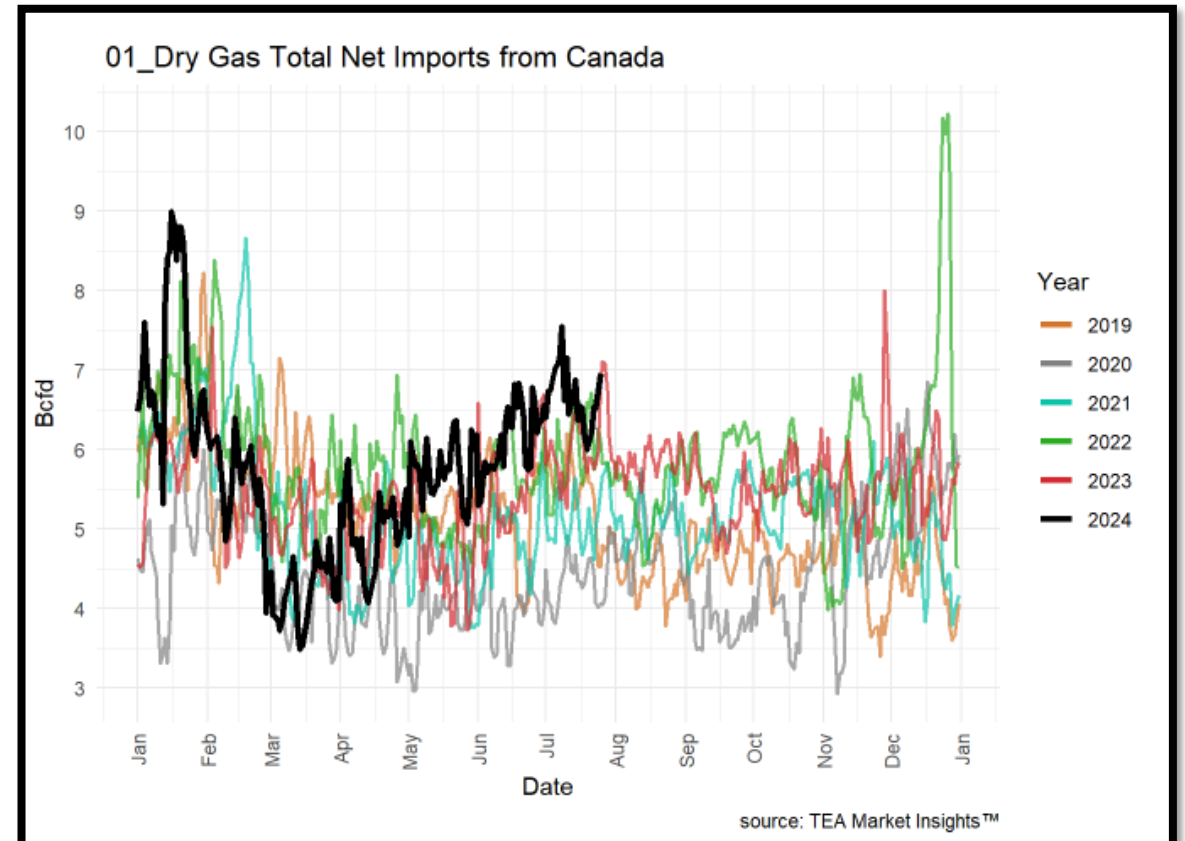


# CANADIAN IMPORT WEAKNESS COMPOUNDS OVERSUPPLY

## Mexi exports flat YoY...



## Canadian oversupply forces gas south...

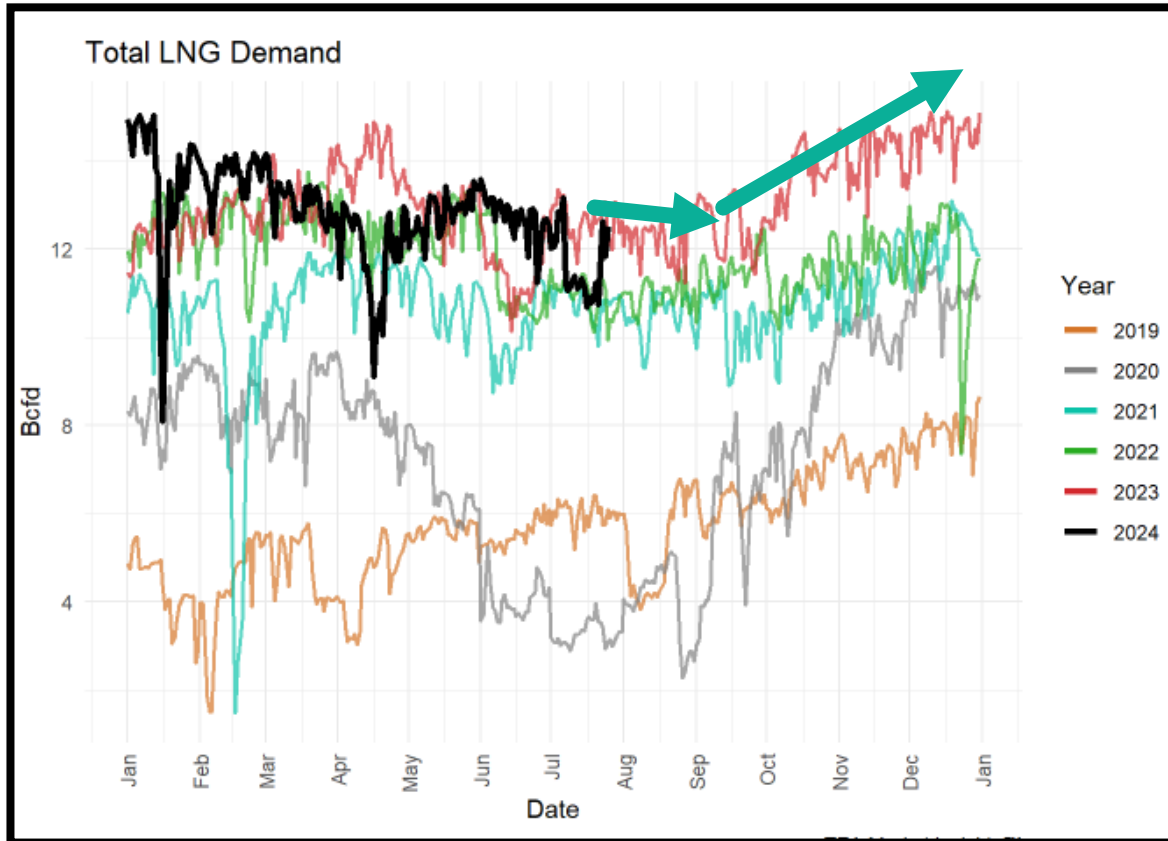


SOUTH PARK P.T.A. MEETING

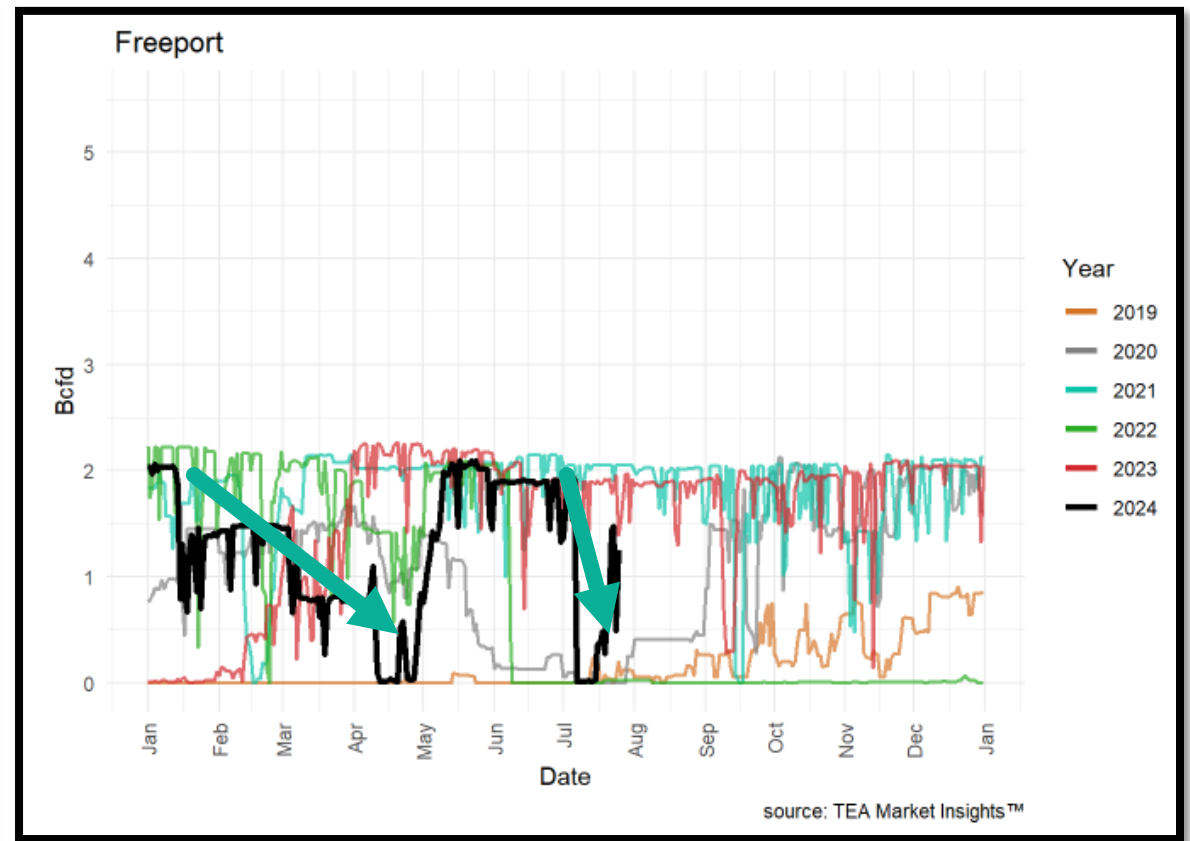


# LNG DEMAND UNDERPERFORMED EXPECTATIONS

LNG to set new highs this winter...



If Freeport can ever run full...

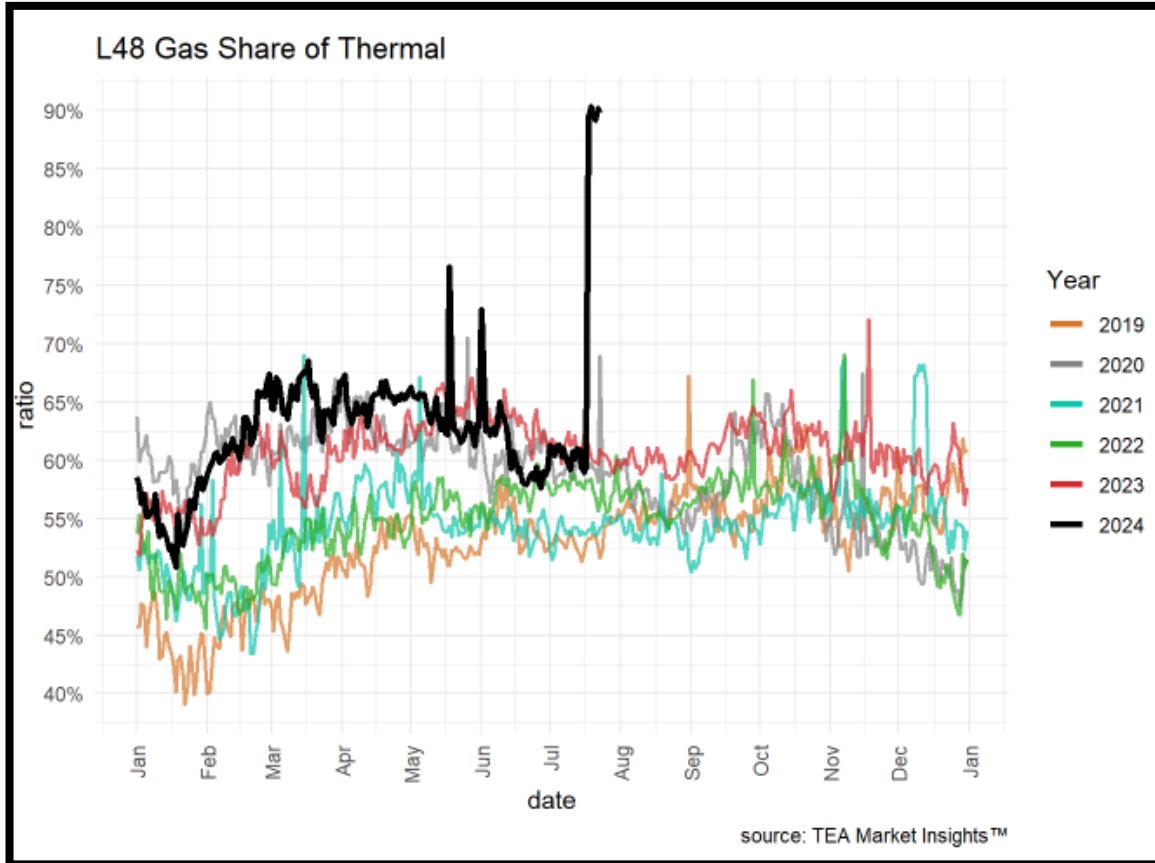


# WILL FREEPORT GET IT TOGETHER?

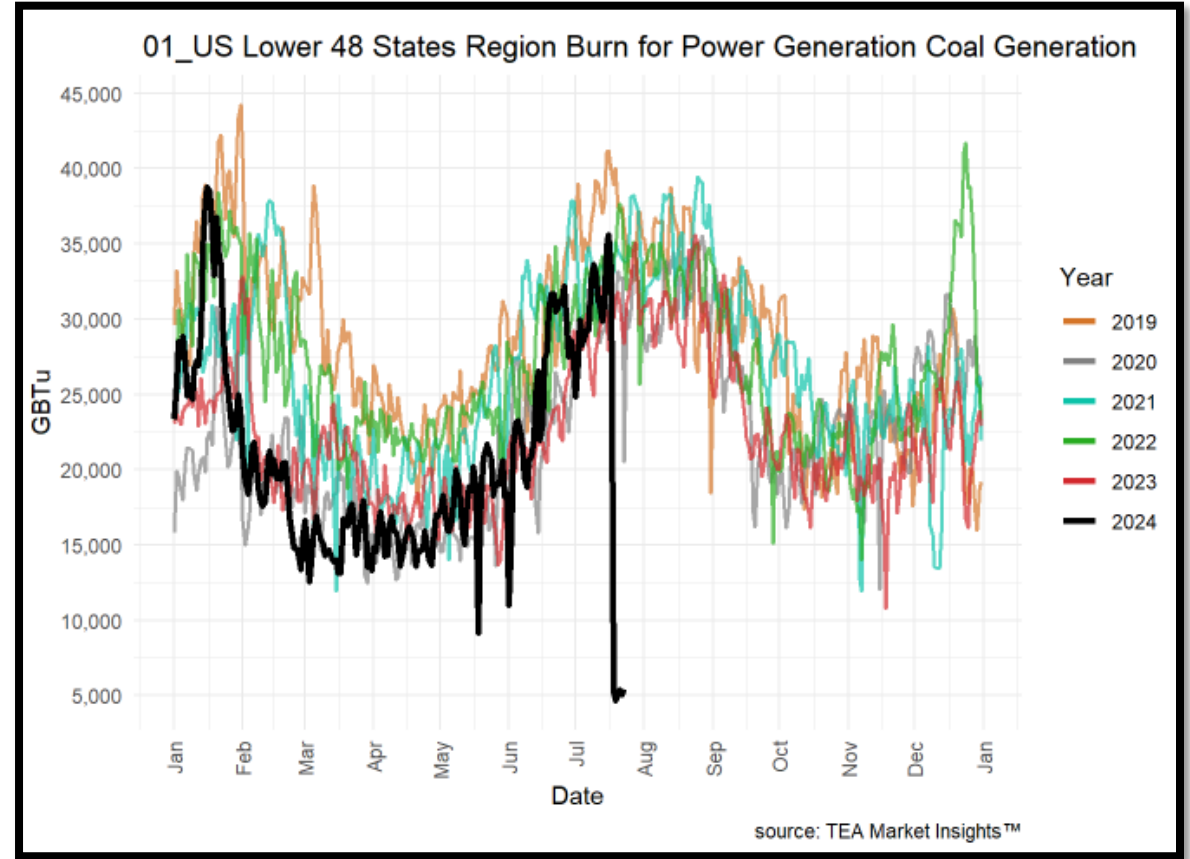


# NO ROOM FOR COAL IN THE STACK

Gas share of thermal slightly lower YoY...



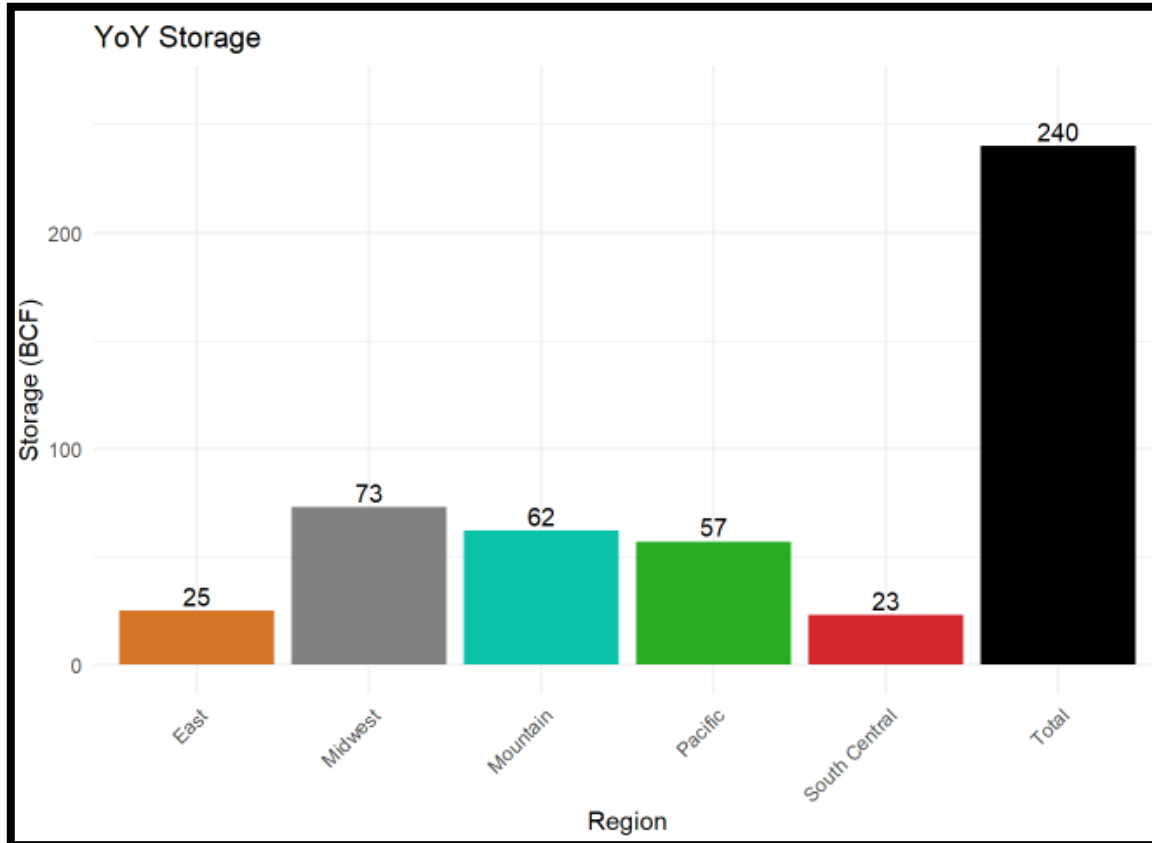
Due to coal outperforming...



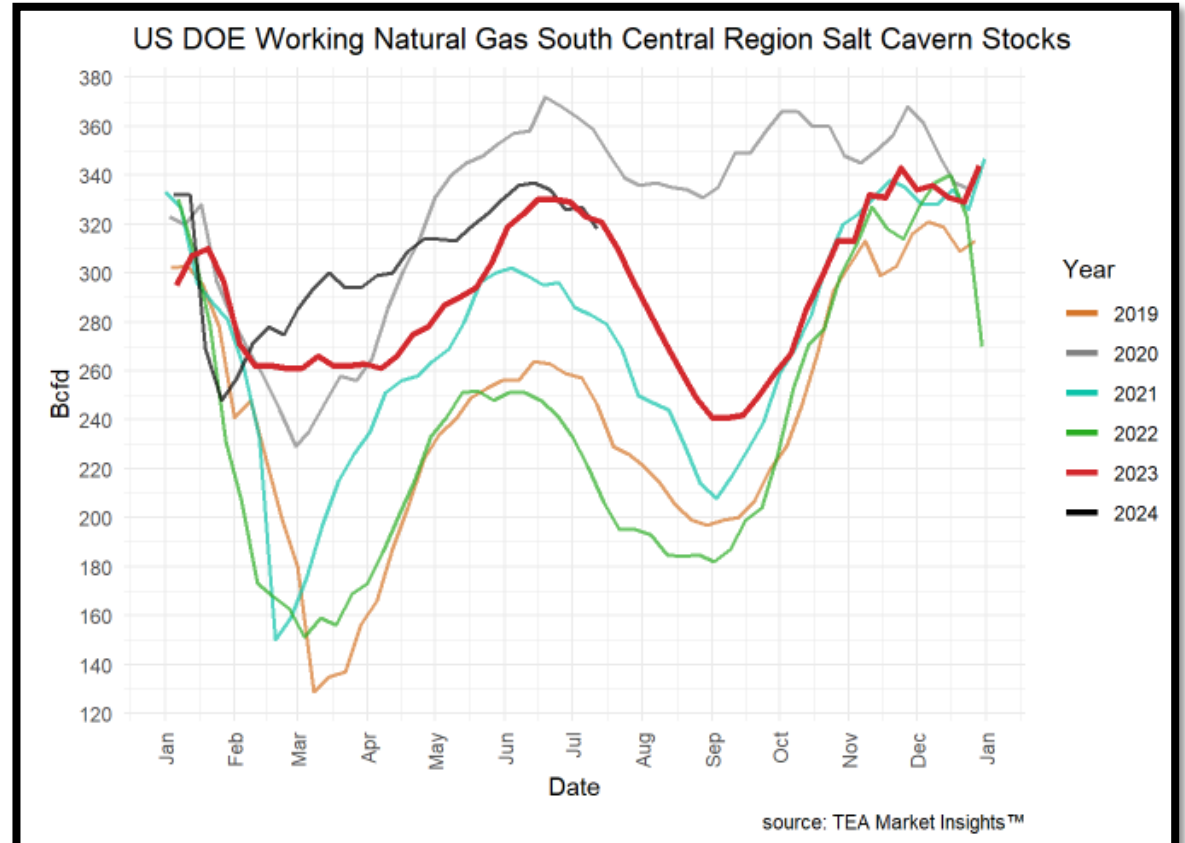


# VERY FULL STORAGE, BUT REGIONAL DIFFERENCES

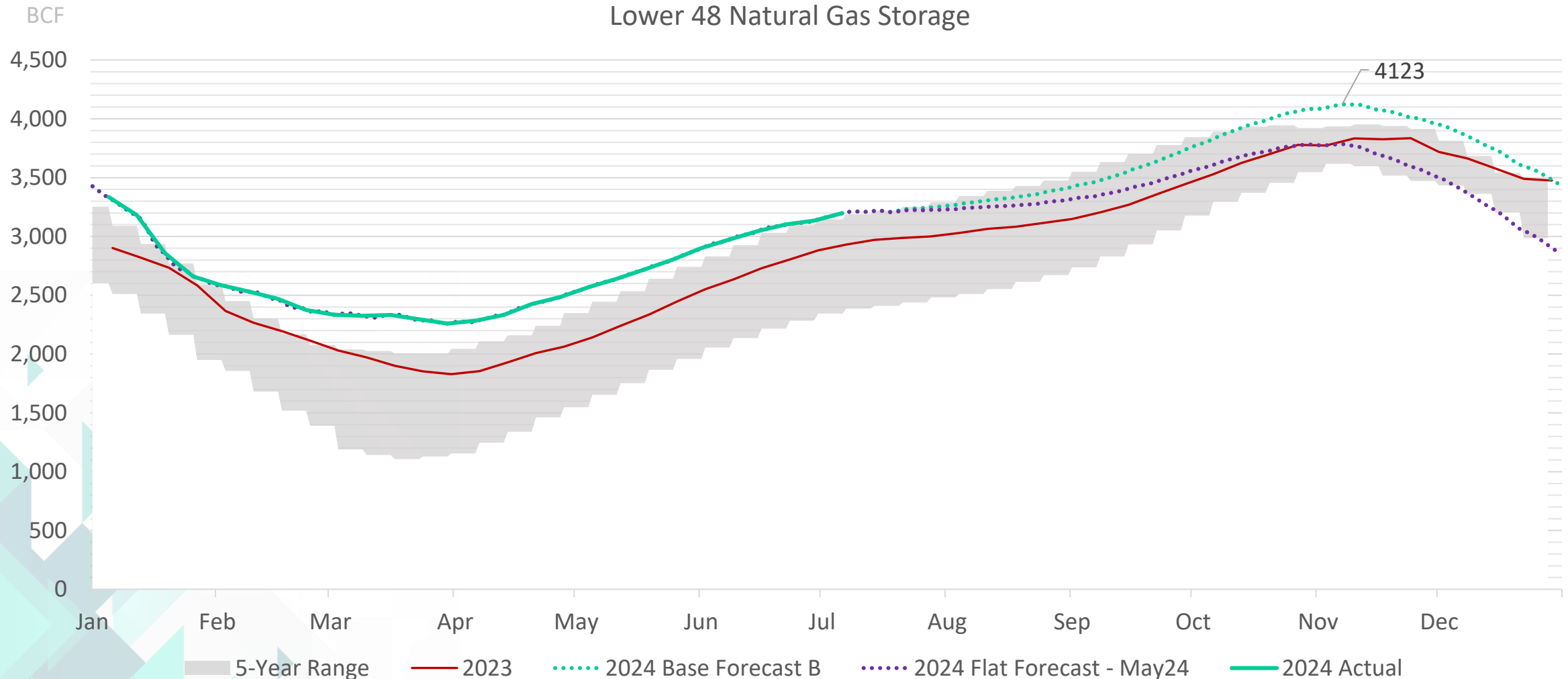
## Setting new 5 yr highs



## South Central Salts can keep Hub buoyed



# PRODUCTION MUST BE CURTAILED SOON



# GETTING CLOSE...

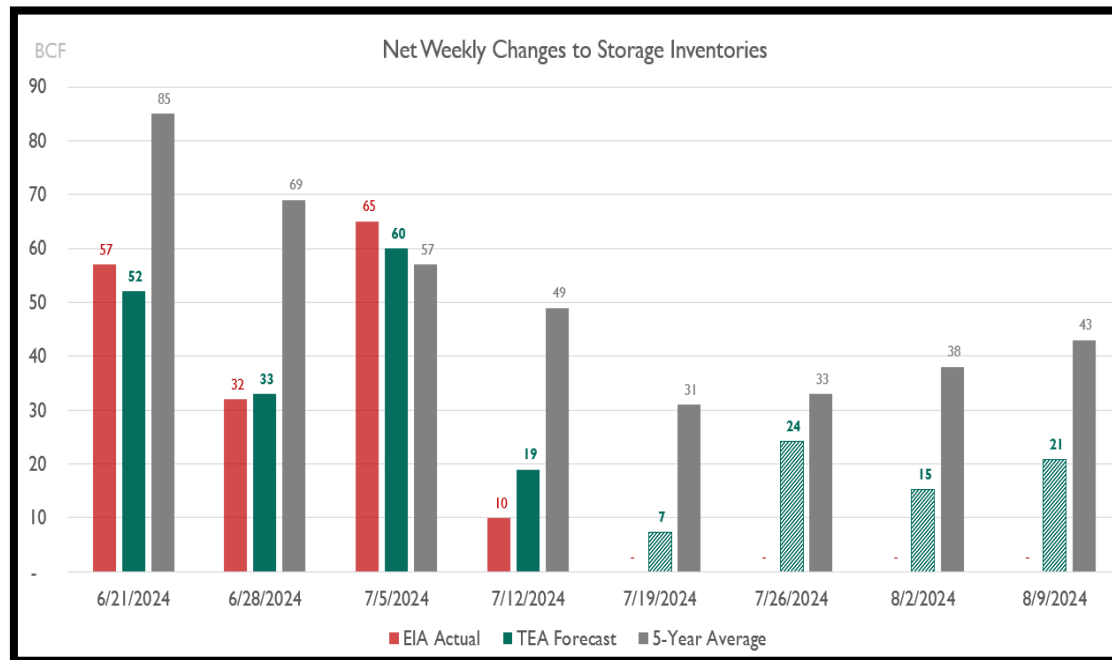


# BAL-YEAR OUTLOOK

# 2024 OUTLOOK – BEARISH THEN BULLISH

## Grind lower through September

- However, Hub can get tight fast under the right circumstances
- Potential for rally to mid-\$2s if Southeast heat coincides with production curtailments
- Storm risk has bearish skew



## Bearish then Bullish Winter

- Production ramps too early (again) in November
- Market sells Jan-Feb too much in sympathy
- **Cold reminds everyone of deliverability risks**
- Jan-Feb peak day ~\$12/mmbtu ceiling (LNG curtails)



# Q&A





2024 Annual Conference



Michael Gehring, CFA  
Director, Portfolio Management & Analytics  
[mgehring@teainc.org](mailto:mgehring@teainc.org)



THANK YOU!

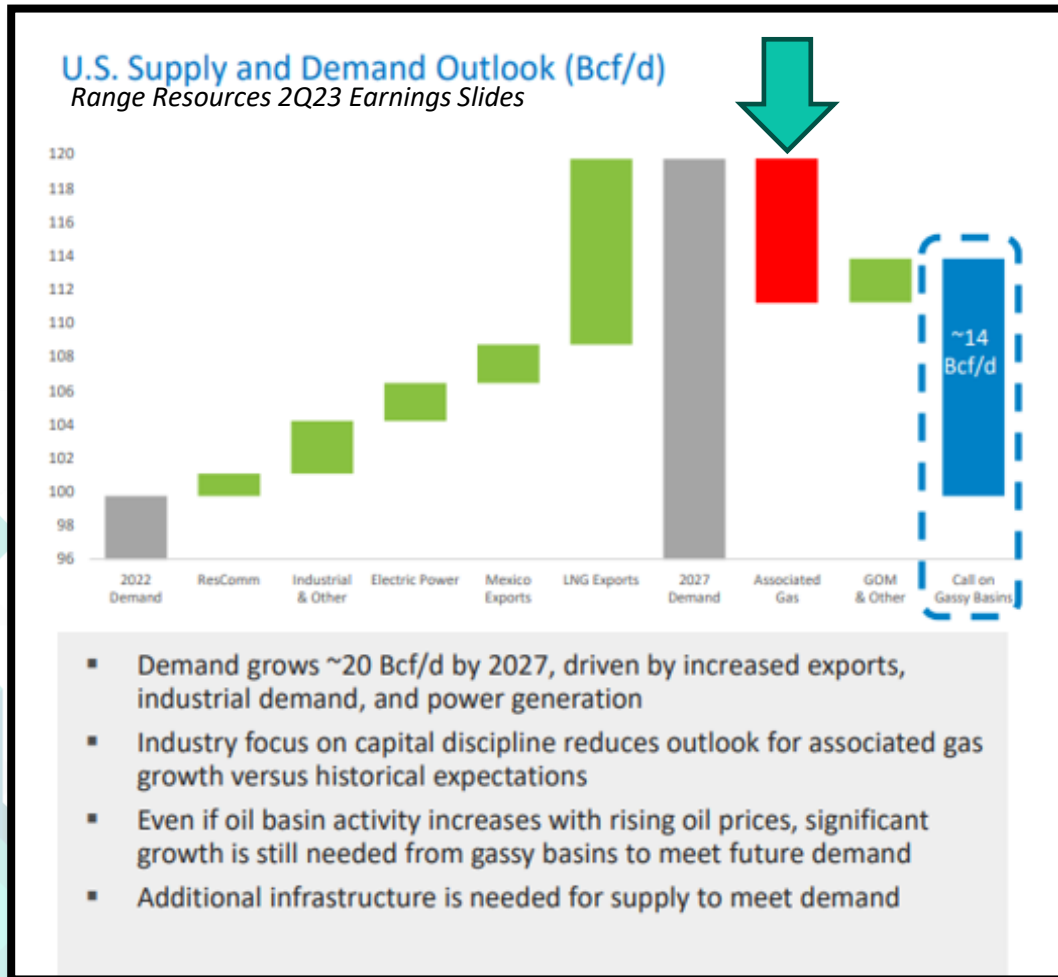
EXPECT VOLATILITY & PREPARE

# BONUS SLIDES

## **TWO** HIGH CONSEQUENCE RISKS TO WATCH FOR



# RISK #1 – PERMIAN ASSOCIATED GAS GROWTH UNDERWHELMS

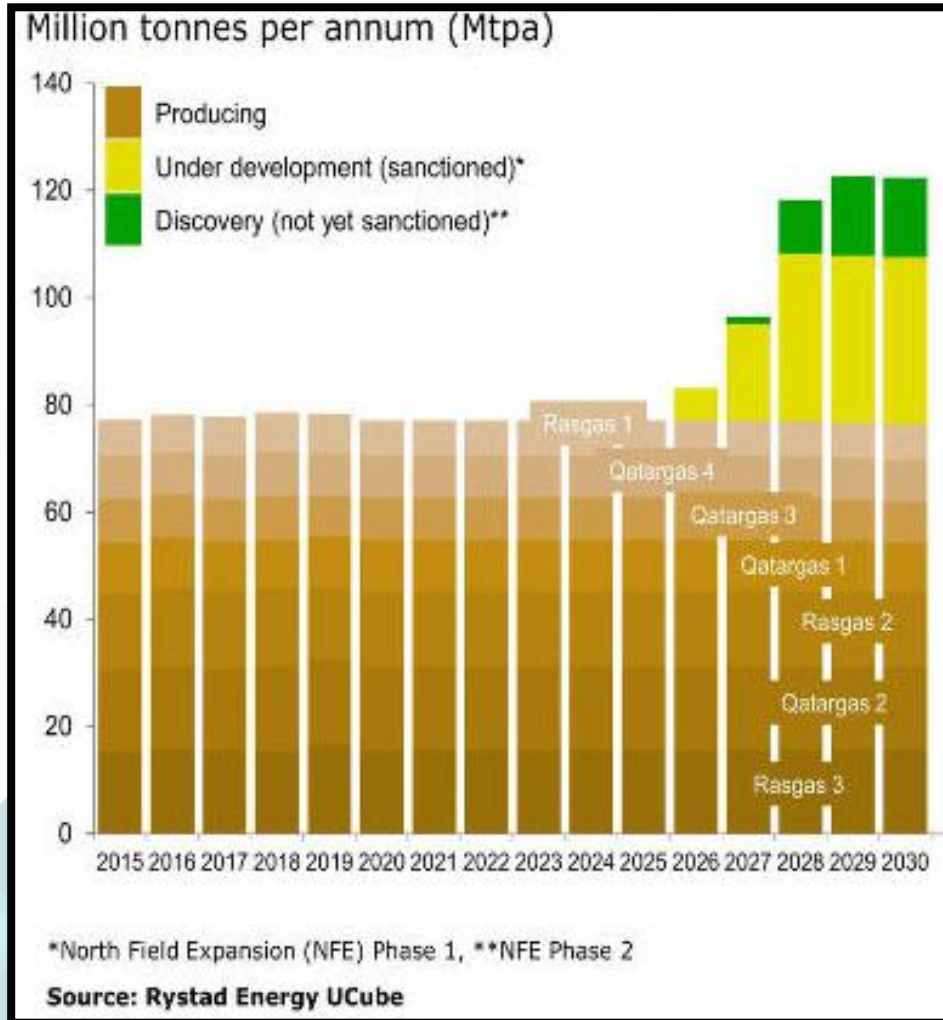


**IMPACT: Henry Hub** ↑↑↑↑↑

## Potential Catalysts

- Faster than expected EV Penetration (Crude ↓, Loads ↑)
- Crude Export Ban (Crude ↓)
- Fracking ban
- OPEC+ brings back excess capacity

# RISK #2 – LNG EXPORTS DO NOT RUN AT FULL CAPACITY



**IMPACT: Henry Hub** ↓ ↓ ↓ ↓

- ### Potential Catalysts
- QATAR LNG EXPANSIONS
  - Russia → Europe flows increase
  - U.S. LNG EXPORT BAN
  - HURRICANES / FORCED OUTAGES