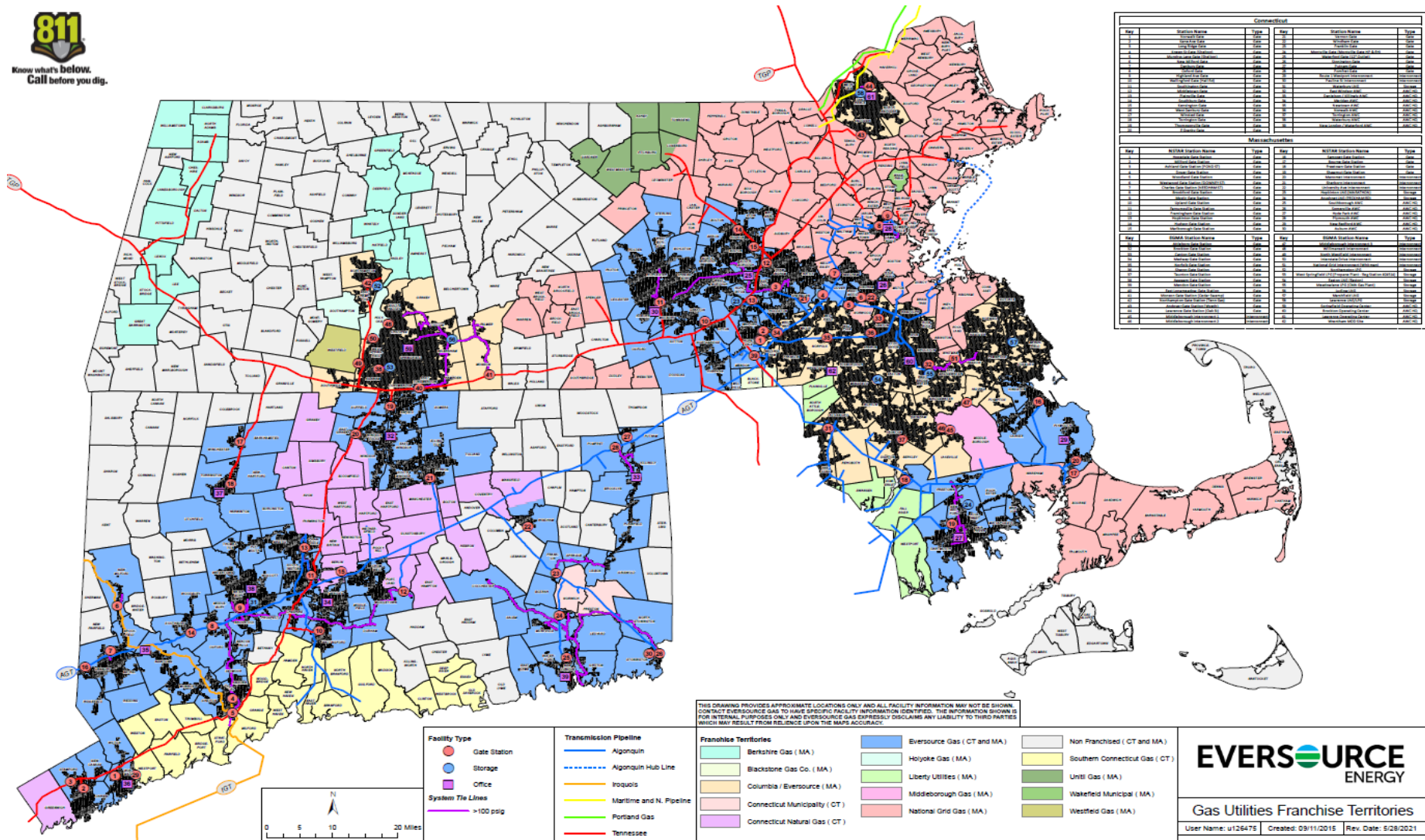


Challenges of Meeting Peak Demand

NGA Gas Operations Conference

April 4, 2024

Eversource Gas LDCs



Connecticut			
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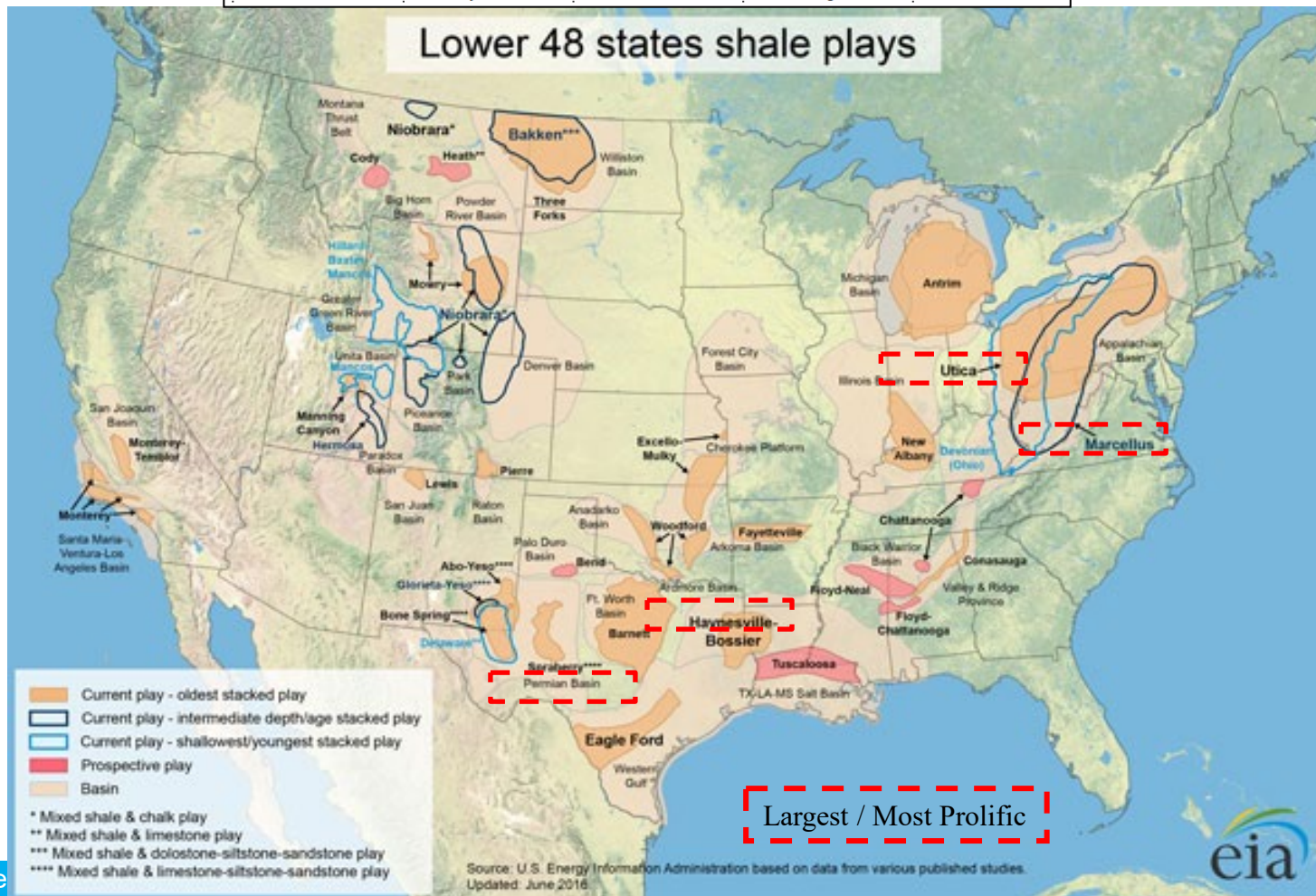
Massachusetts			
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Where does the gas come from?

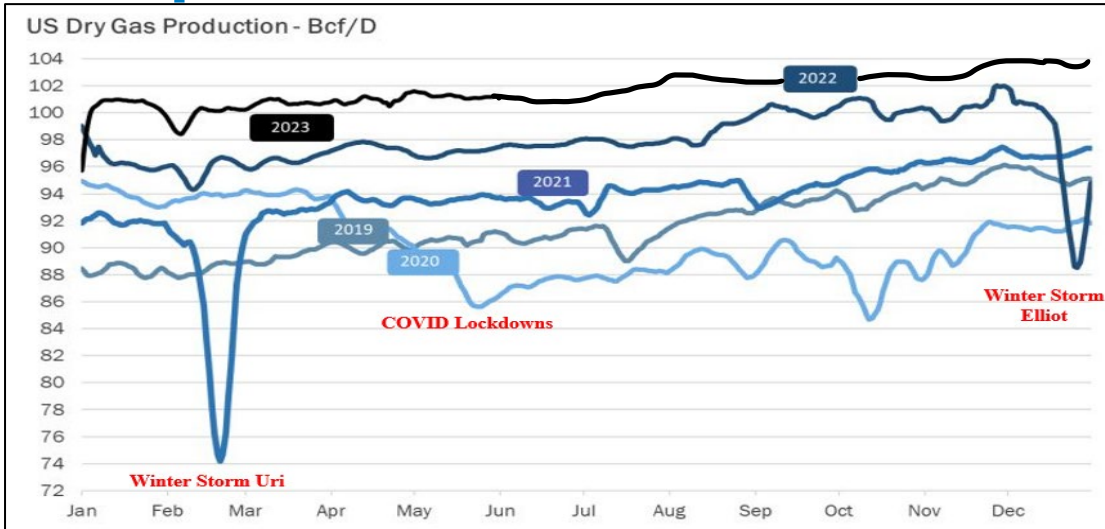
Shale gas is not new – but modern technology allows economic extraction

The top five natural gas-producing states and their percentage share of total U.S. natural gas production in 2021 were:

24.6%	21.8%	9.9%	7.4%	6.7%
Texas	Pennsylvania	Louisiana	West Virginia	Oklahoma



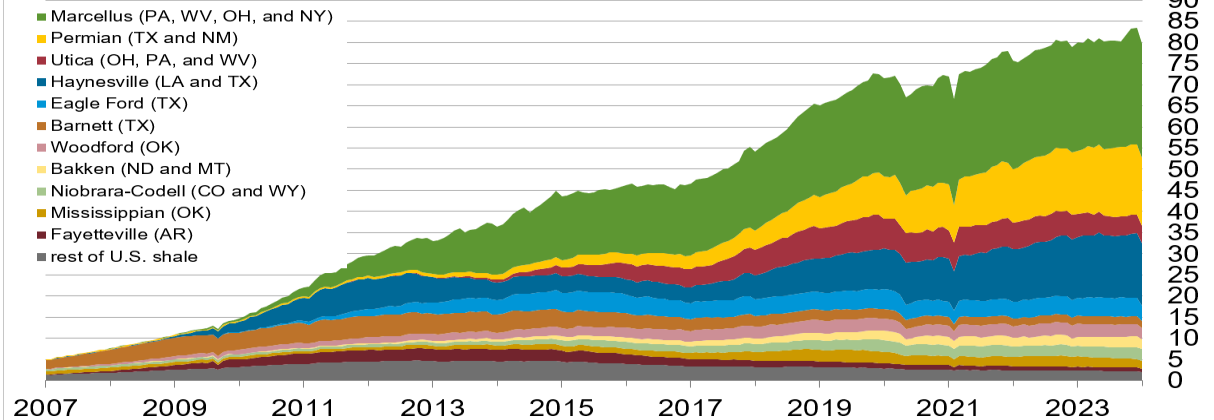
Impact of Shale Gas



- US production is 102 Bcf/day, but sensitive to market disruptions
- Shale production is now almost 85% of US production
- Marcellus and Utica production of 35 Bcf/day only 300 miles away, but

- With limited takeaway capacity growth Marcellus and Utica growth has begun to flatten out
- Permian & Haynesville have been growing an international export growth

Monthly dry shale gas production
billion cubic feet per day



Data source: Enverus.

Note: We derived these shale gas estimates from Enverus state administrative data. Data are through January 2024. Data for January 2024 have been partially derived using data from S&P Global Commodity Insights to account for weather-related production outages. PA=Pennsylvania, WV=West Virginia, OH=Ohio, NY=New York, TX=Texas, NM=New Mexico, LA=Louisiana, OK=Oklahoma, ND=North Dakota, MT=Montana, CO=Colorado, WY=Wyoming, AR=Arkansas

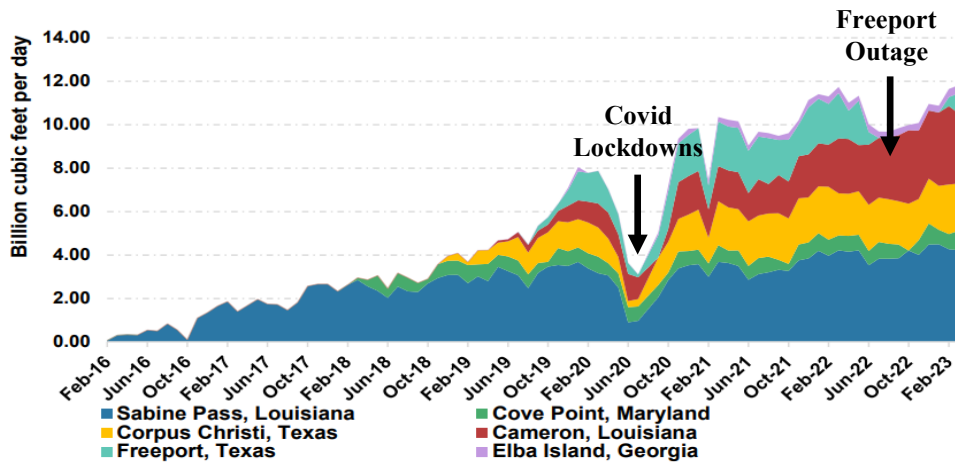


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Where is all of the Gas going?

Page 3

1c. Domestically-Produced LNG Exported by Point of Exit (February 2016 through March 2023)



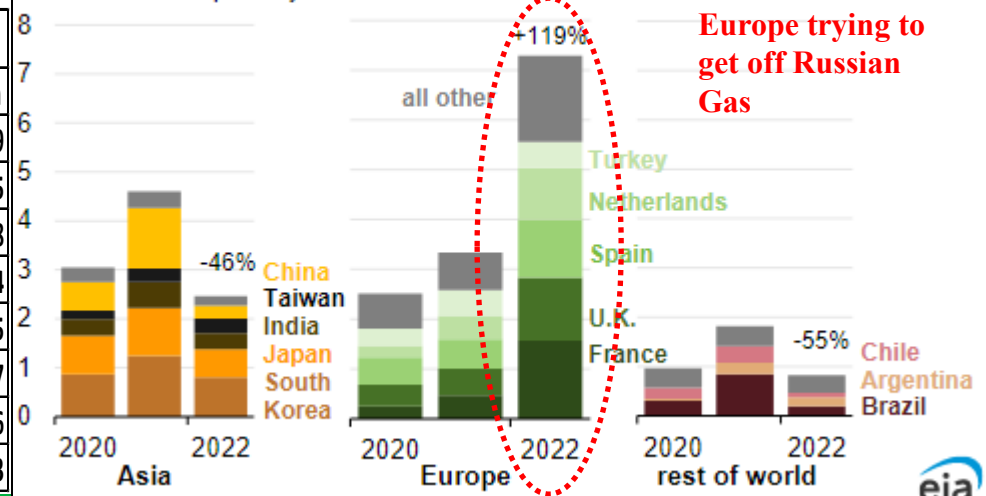
The Cameron, LA point of exit includes exports from Cameron LNG and Venture Global Calcasieu Pass.

- LNG exports > 10% of US production
- Current capacity 14 Bcf/day with EIA forecast of another 5.7 Bcf/day by 2025
- Gas from PA and OH flows south to feed demand
- War in Ukraine has driven more cargos to Europe

US LNG Commercial Liquefaction Facilities

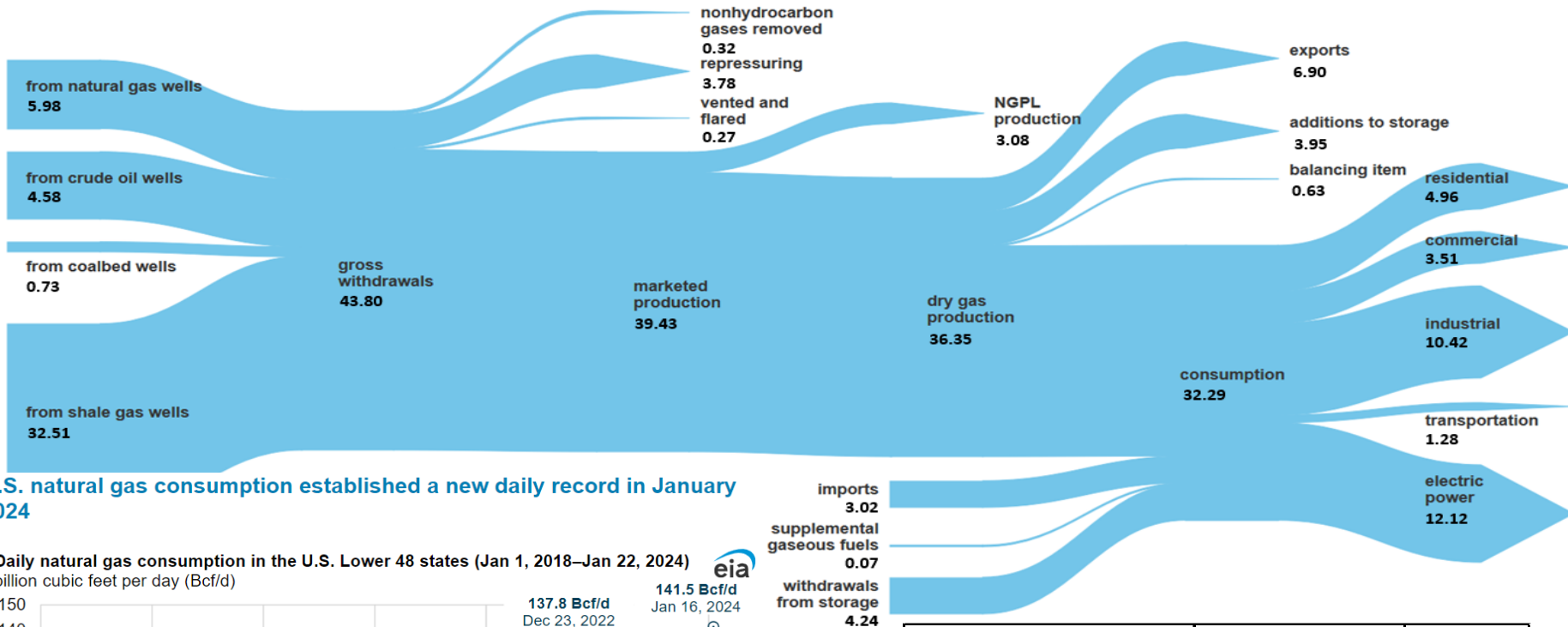
Facility	Owner	State	Functions	BCFD
Cove Point LNG	Dominion Energy	Maryland	Import/Export	0.79
Elba Island	Kinder Morgan	Georgia	Import/Export	0.35
Freeport	Freeport LNG	Texas	Import/Export	2.38
Corpus Christi	Cheniere Energy	Texas	Export	2.4
Sabine Pass	Cheniere Energy Inc	Louisiana	Export	4.55
Cameron LNG	Sempra Energy	Louisiana	Export	1.7
Calcasieu Pass	Venture Global Calcasieu Pass, LLC	Louisiana	Export	2.06
				14.23

Annual U.S. liquefied natural gas exports by destination (2020–2022)
billion cubic feet per day

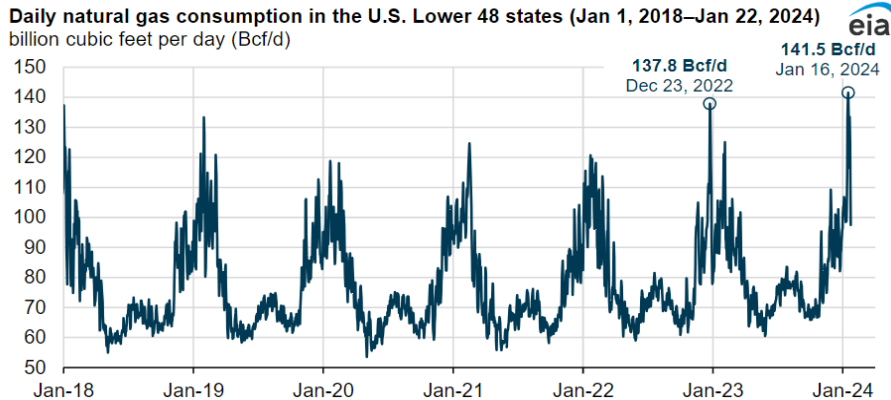


U.S. Gas Demand

Natural gas flow in the United States, 2022
trillion cubic feet



U.S. natural gas consumption established a new daily record in January 2024

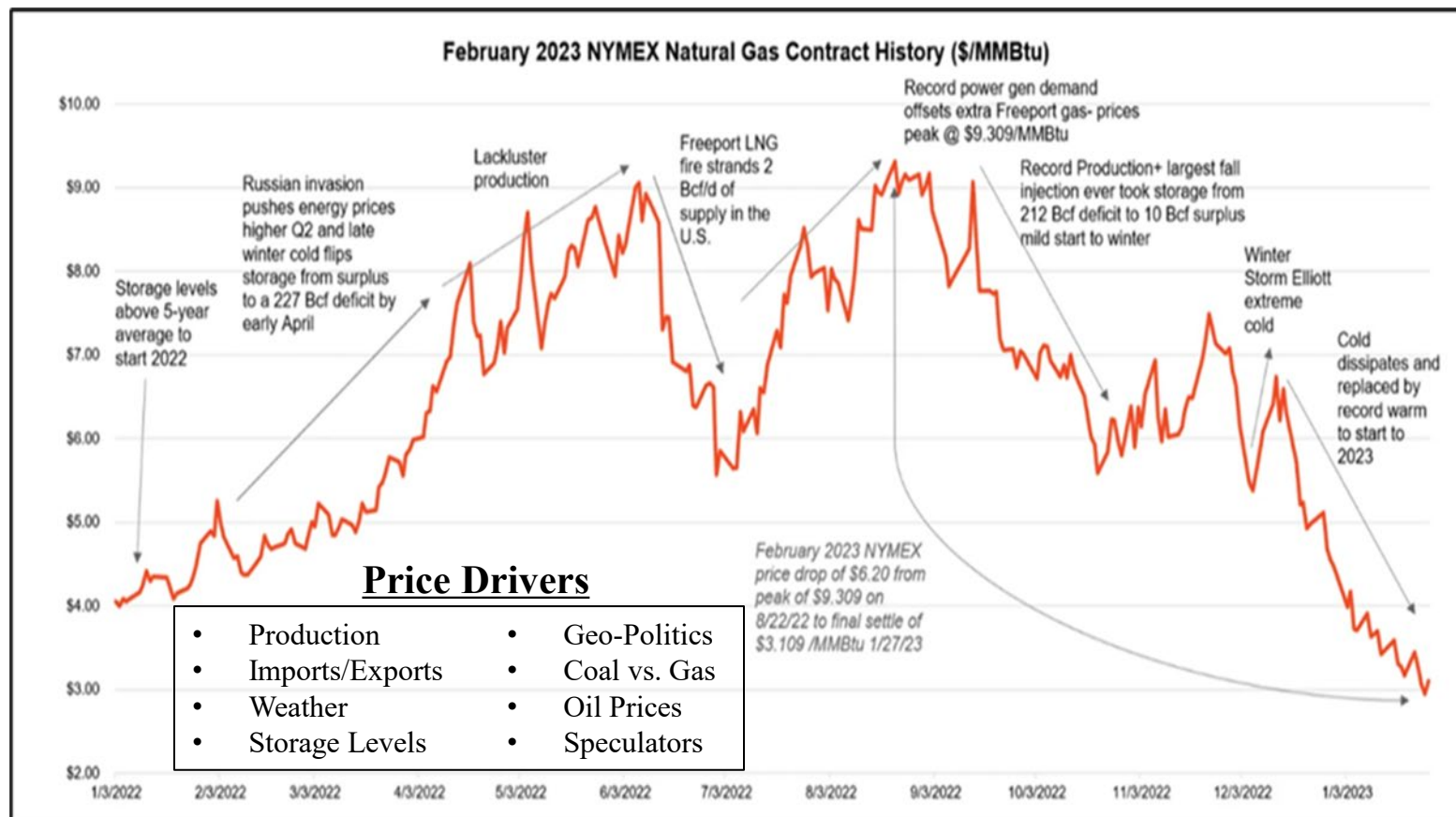


Data source: S&P Global Commodity Insights

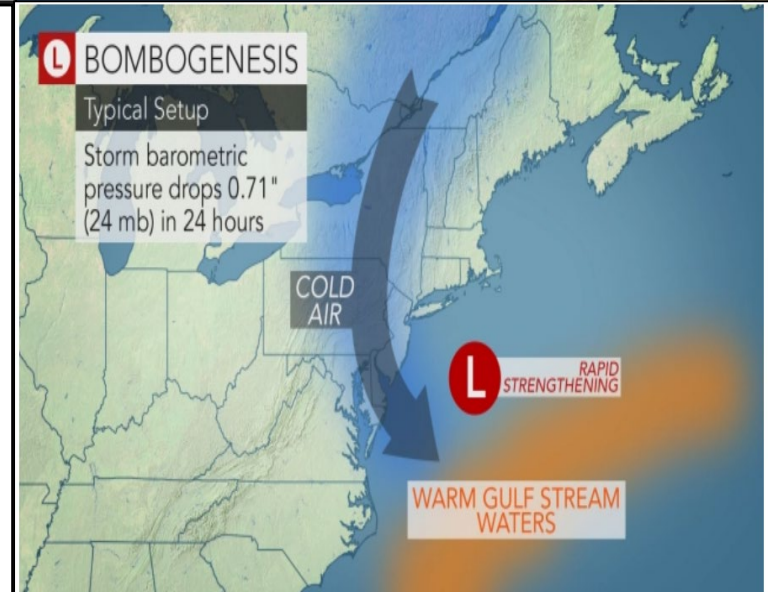
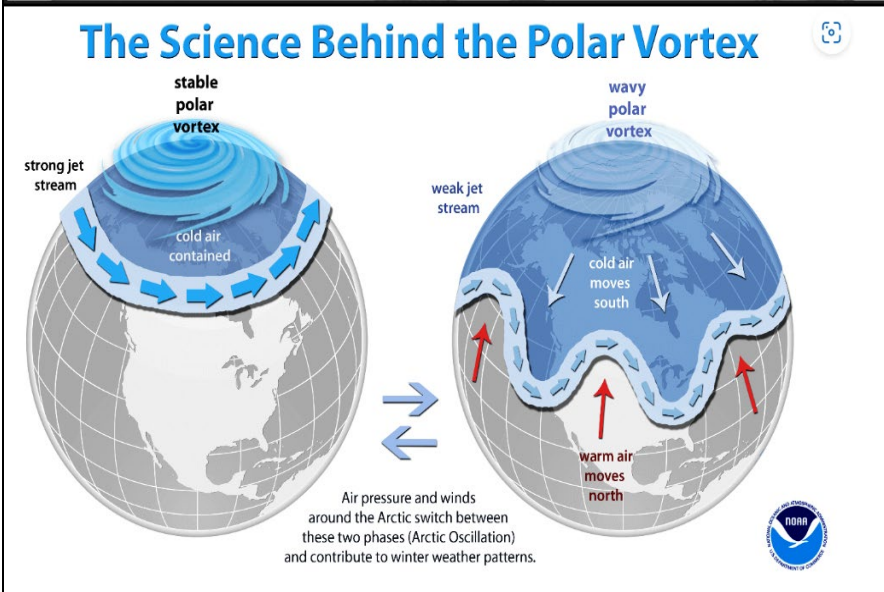
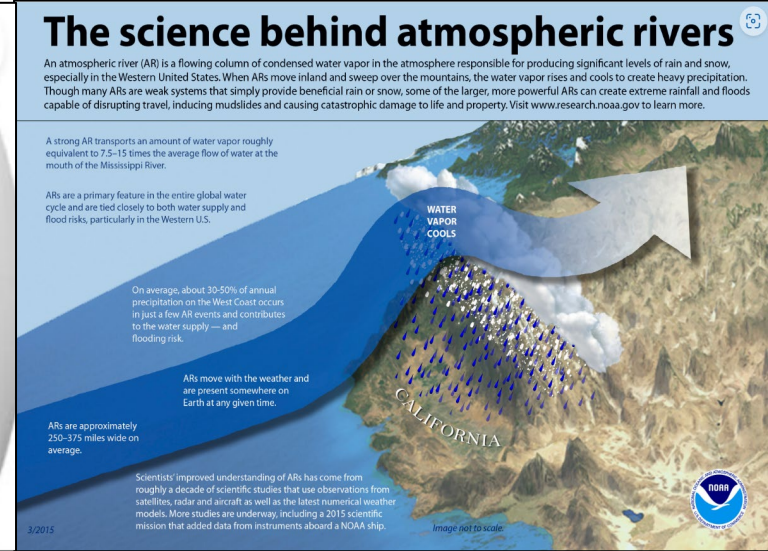
Demand Type	BCFD	%
Residential	13,589,041	15%
Commercial	9,616,438	11%
Industrial	28,547,945	32%
Transportation	3,506,849	4%
Electric Power	33,205,479	38%
Total	88,465,753	

Recent Gas Price Volatility

- In past 18 months we have seen unprecedented price volatility, but things have settled down in recent months
- Feb 2023 NYMEX contract was on a rollercoaster ride during 2022



Gas Supply Weather Homework



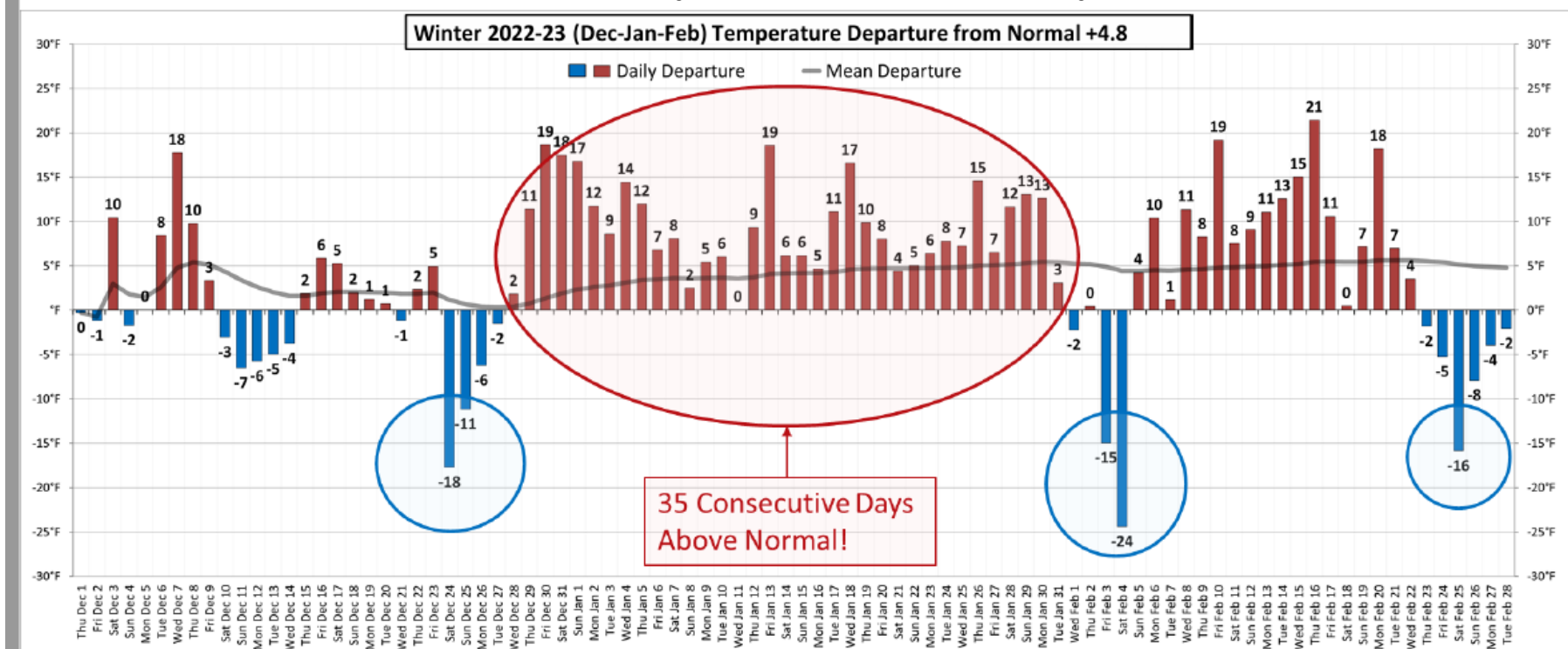
Where do you get your weather?

Some Guy In His Mom's Basement on YouTube



Plan for the Worst, Hope For the Best

- Winter 22-23 demonstrates the types of swings we need to plan for
 - Very mild winter in aggregate
 - But a few extreme cold days that stretch the system



Now imagine if this graph was inverted and we had prolonged cold spell

LDC Gas Demand

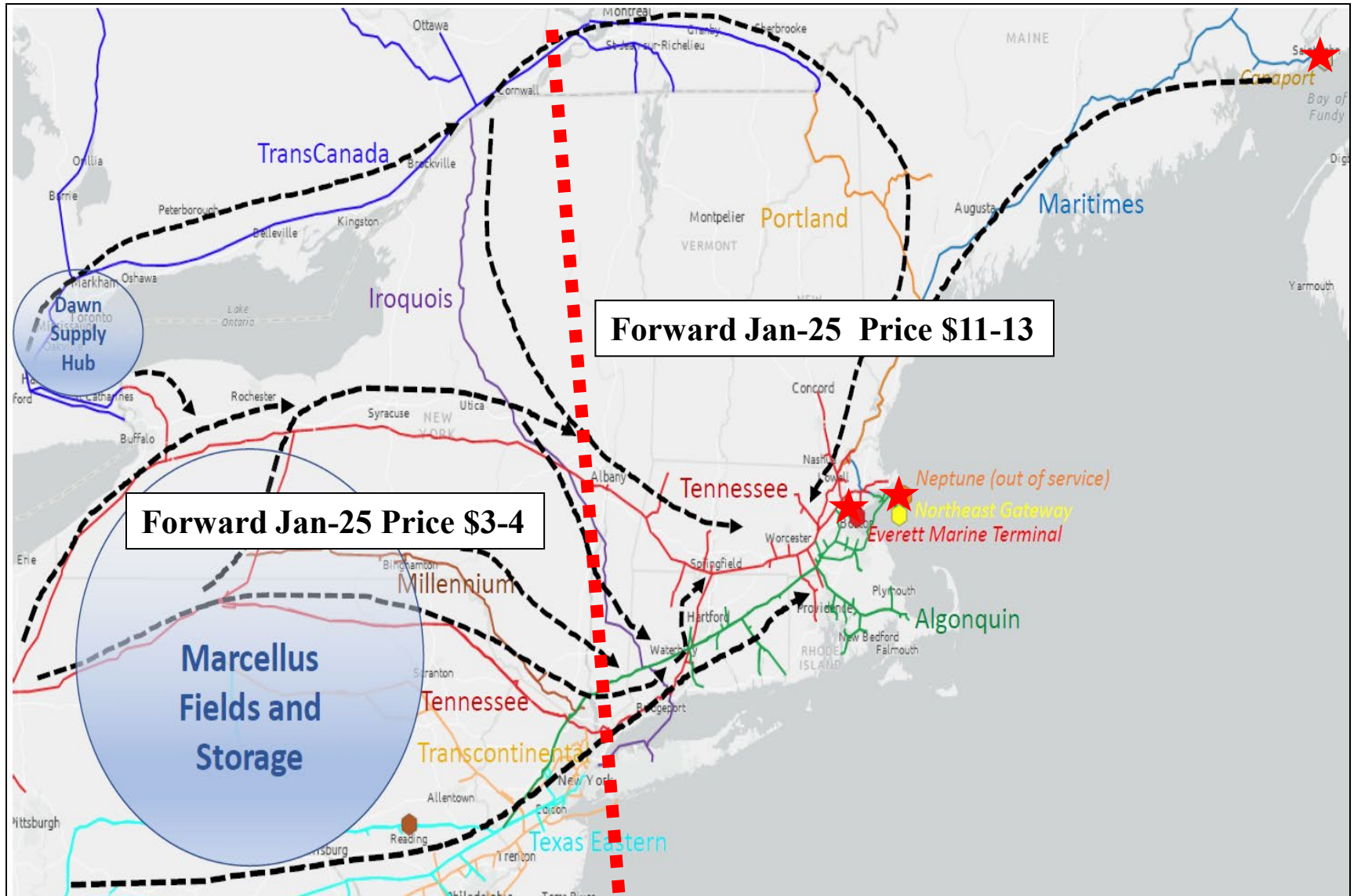
Eversource Gas LDC Design Day Demand (MMBtu/Day)

	2023-2024	2024-2025	2025-26	2026-27	2027-28	
NSTAR Gas	566,800	575,900	585,200	591,052	596,963	Approved Aug 2023 To Be filed Oct 2023 Filed and accepted
EGMA	521,206	520,408	522,745	531,448	538,742	
Yankee Gas	493,685	500,619	505,626	510,682	515,789	
Total	1,581,691	1,596,928	1,613,570	1,633,182	1,651,493	
Annual Growth		15,237	16,642	19,612	18,311	69,802
Annual Growth Rate		1.0%	1.0%	1.2%	1.1%	

New England Infrastructure Today

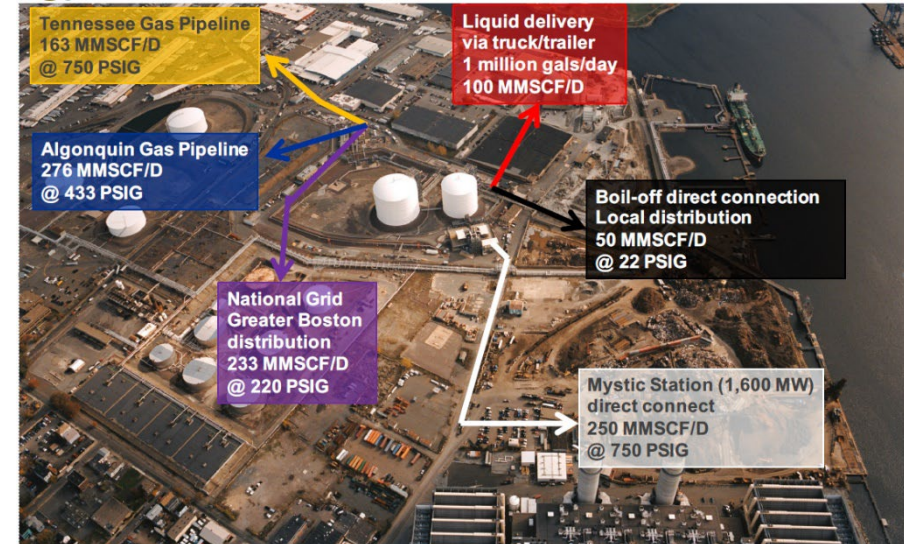


A story as old as time.....



NE Depends on Imported LNG....

- Everett Marine Terminal (Constellation) - Boston, MA – 1971 -
- St. John's LNG (Repsol/Irving) - N.B. Canada - 2008
- Northeast Gateway (Excelerate) - Boston Offshore buoy - 2008
- Neptune (GDF) – Gloucester Offshore buoy - 2010 (Decommissioned)



The future of Energy in New England is evolving...

- Natural Gas Alternatives -> RNG, Hydrogen, Geothermal
- Future of Gas Docket MA DPU 20-80 Order
- MA Clean Heat Standards -> Building and appliance energy resource policy
- Electrification -> MA Electric System Modernization Plan
- CT Gas Expansion Program terminated
- CT exploring a future of gas study

QUESTIONS?