



A RANDOM WALK DOWN COMMODITY STREET

Wyoming Gas Fair
Bryan Hassler
September 11, 2019

Transition to the Wyoming Energy Authority (WEA) – progress to date

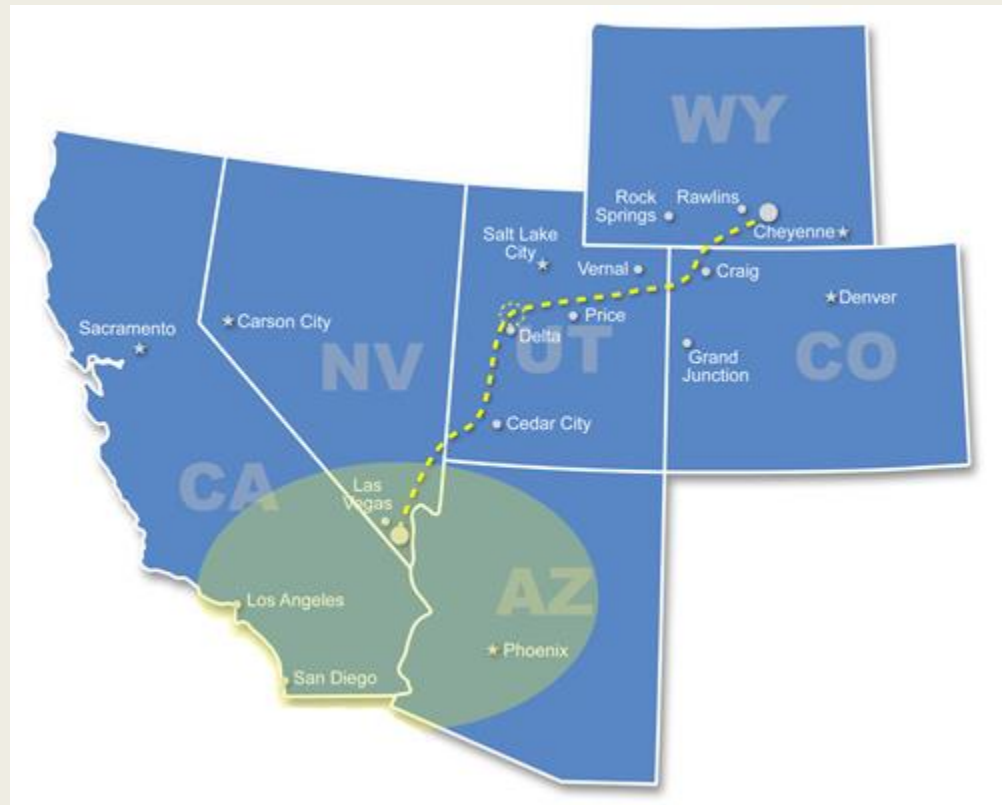
- Wyoming Pipeline Authority (WPA) and the Wyoming Infrastructure Authority (WIA) met July 18th and August 14th in Casper
- Governor Gordon and advisors kicked off the initial meeting with a brief outline of expectations.
- Discussion between joint Boards revolved around approach to be taken in creating the Wyoming Energy Authority and creating value for the State of Wyoming
- The boards agreed to form a joint Interim WEA Transition Board consisting of the existing board members of each board
- The WEA Transition Board agreed to a base line “business as usual” budget for the upcoming biennium
- The WEA Transition Board identified 4 key focus areas of Strategic Opportunity for the WEA
 - *Proactive Regulatory Engagement*
 - *Resource Advocacy*
 - *Market Positioning*
 - *Value Add*
- Over the next few months the Transition Board will be focused on developing these four Strategic Opportunities and developing broad objectives and related initiatives and supplemental budget proposals.
- Next meeting will be held October 11, 2019 in Cheyenne to include ex officio members

Energy “Buckets” in Wyoming

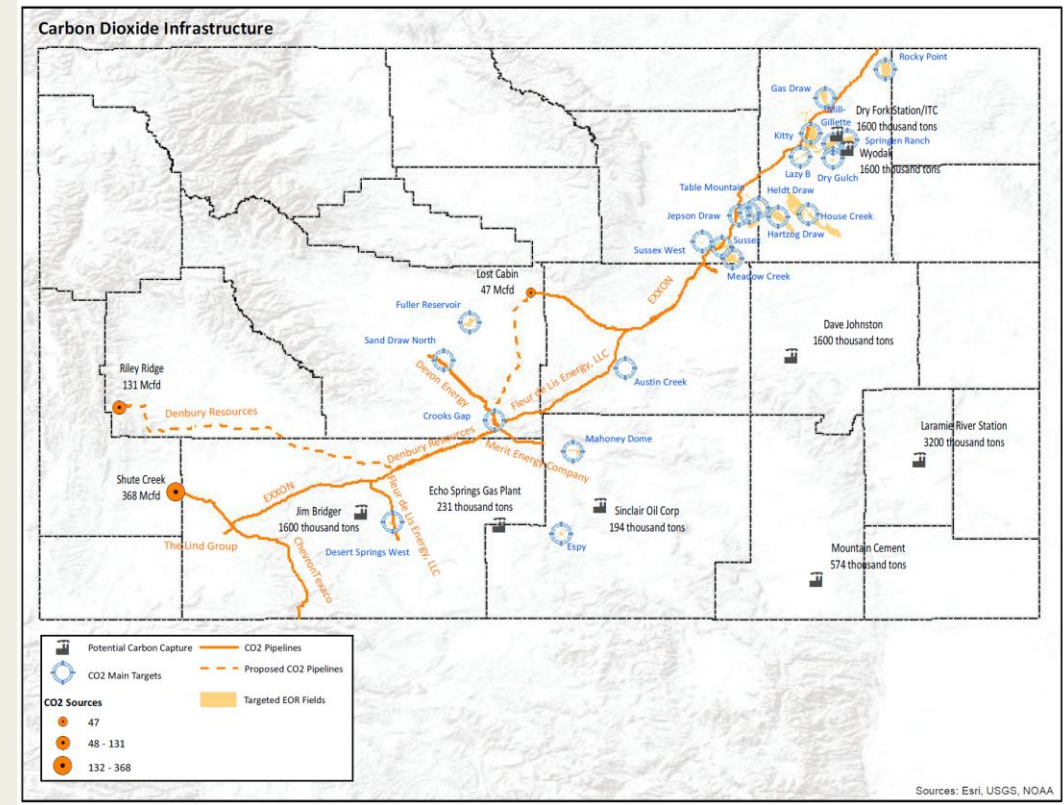
- Coal
- Oil and Gas
- EOR
- Uranium
- Generation
 - *Coal*
 - Carbon Capture
 - ITC
 - *Natural Gas*
 - *Wind*
 - *Solar*
 - *Biomass*
 - *Hydro*
- Electric Transmission
- Pipelines
 - *Oil*
 - *Natural Gas*
 - *Natural Gas Liquids*
 - *Products*
 - *CO2*
- Rail
- Markets
- Conservation
- Technology Development

Major Infrastructure Deficiencies

■ Electric Transmission



■ CO2 Infrastructure



Major Infrastructure Deficiencies

- Transmission Infrastructure – Wyoming is an island
- CO2 Infrastructure
 - *In late 2018 Advanced Resources International estimate there is 1.6 billion barrels of economically recoverable oil in Wyoming using CO2 enhanced oil recovery. Assuming the state is entitled to roughly 6% of this resource via severance taxes and an incremental 4% through federal and state royalties, the potential prize for the state in developing incremental CO2 infrastructure is approximately - \$9.6 billion in future revenue (assuming \$60/bbl oil) from just enhanced oil recovery from existing reservoirs. Couple this with CO2 sequestration and the 45Q tax credit and the potential windfall for Wyoming by paving the road for incremental CO2 handling infrastructure is enormous.*
- East to West flowing natural gas capacity – WIC, CIG, REX
- Expiring capacity contracts – Cheyenne Plains & REX
- Crude Oil
- NGL's
- West Coast Export Capabilities – Jordan Cove LNG; Costa Azul

Western States and Tribal Nations

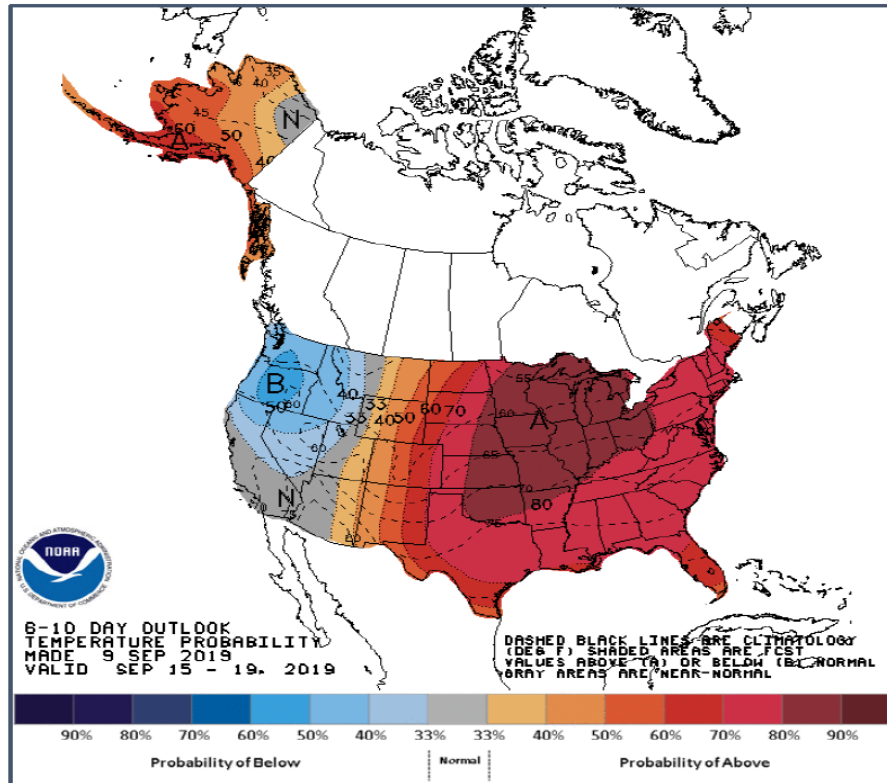
- Coalition that includes:
 - *Utah*
 - *Wyoming*
 - *Garfield, Mesa, Rio Blanco, Moffat counties in Colorado*
 - *Baja Mexico*
- Also supported by producers
- Goal is to collectively support natural gas markets and export opportunities
- Contact Andrew Browning, abrowning@hbwresources.com

The image features two large, thick black L-shaped brackets. One is positioned in the top-left corner, and the other is in the bottom-right corner. They are oriented towards each other, framing the central text.

WHAT'S HAPPENING IN THE COMMODITY
WORLD?

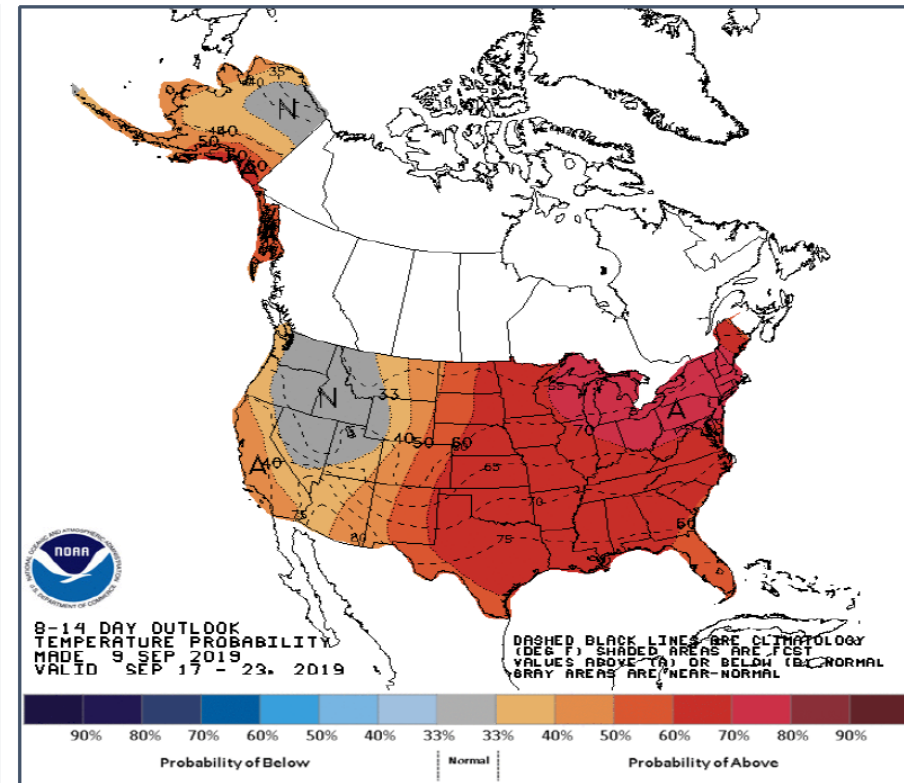
Late Summer Heat Supports Natural Gas Prices

6-10 Day Outlook



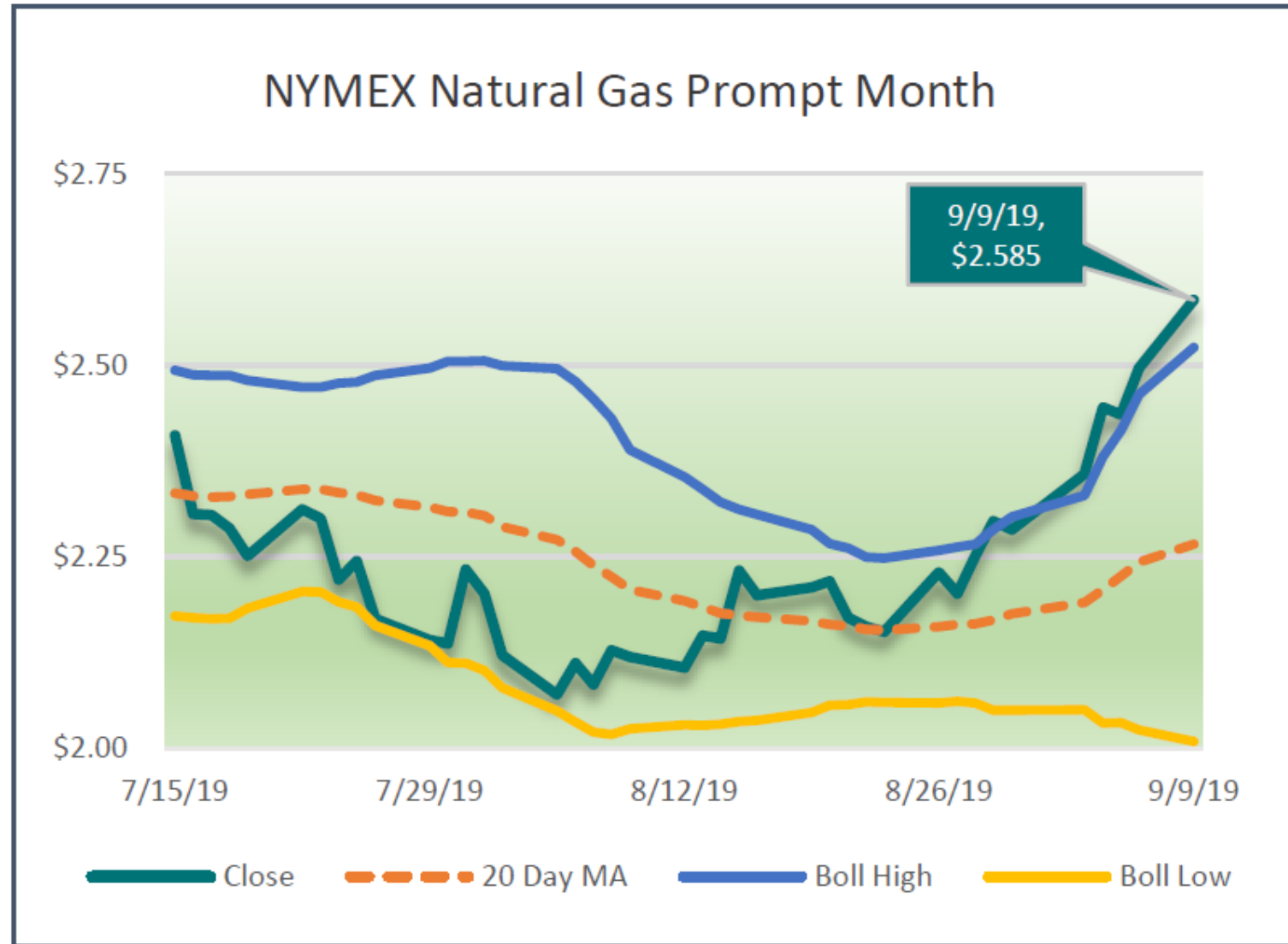
NOAA

8-14 Day Outlook

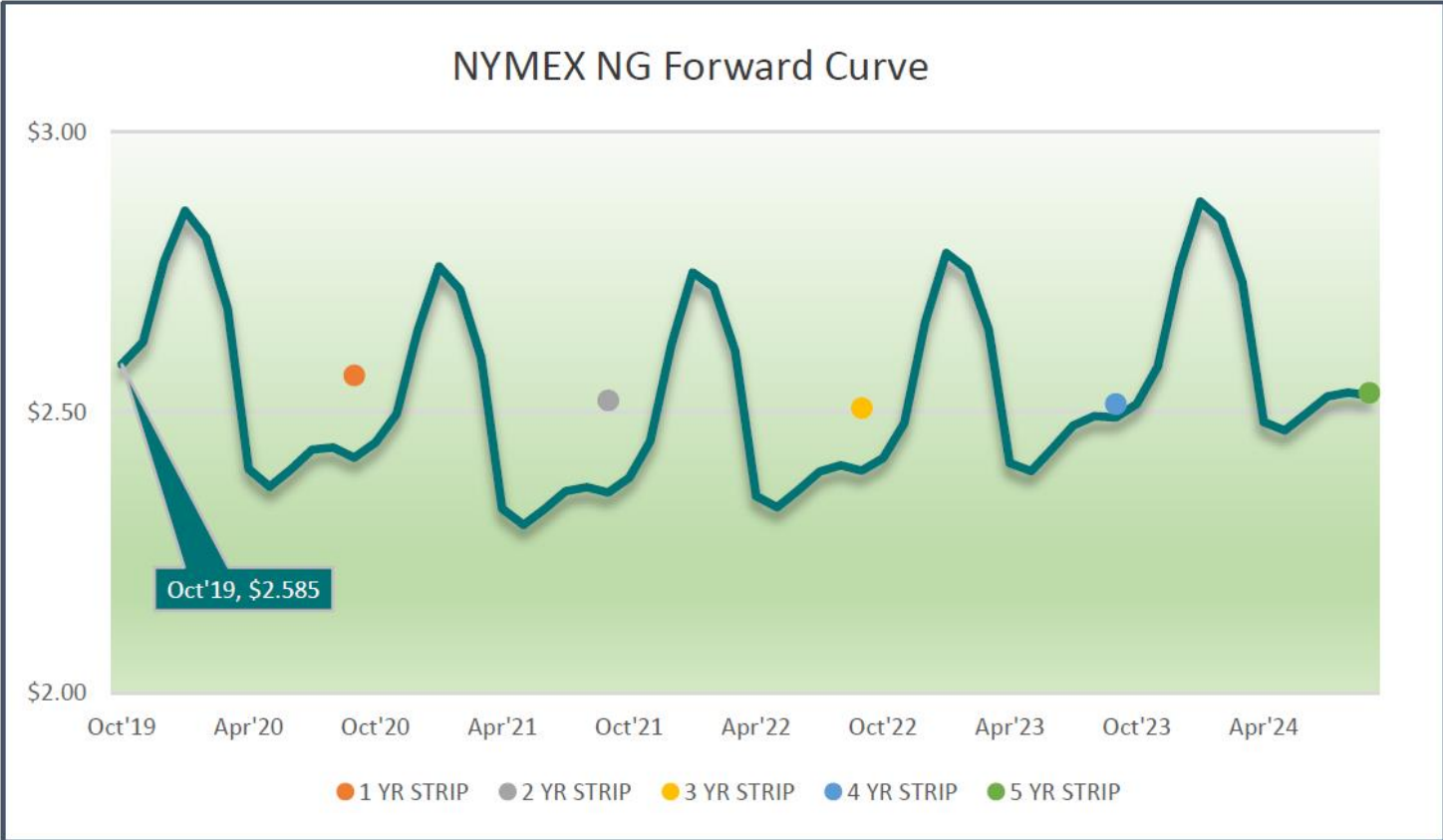


NOAA

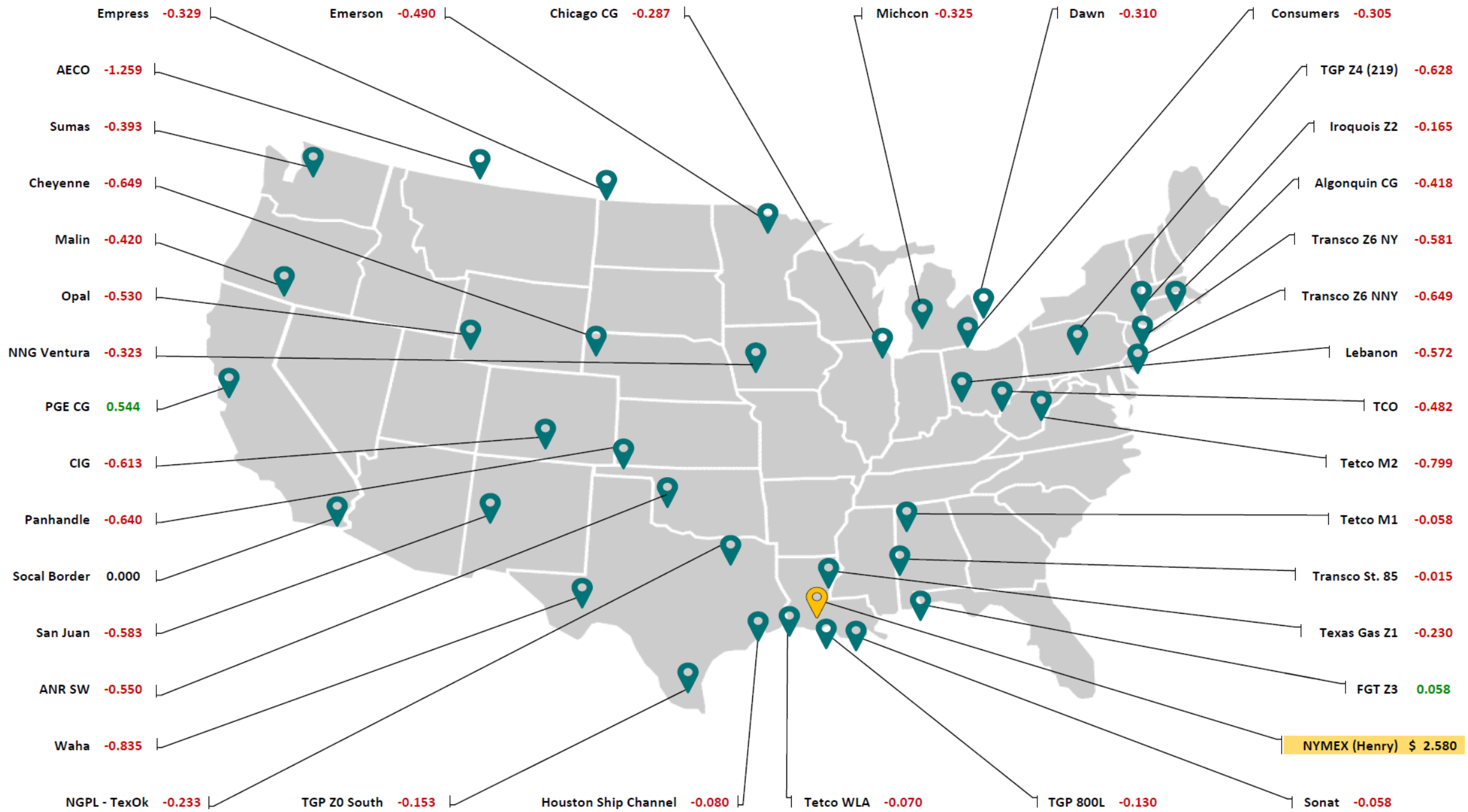
Prices Have Done a U-Turn



The Forward Curve is Not Supportive of Dry Gas Development!

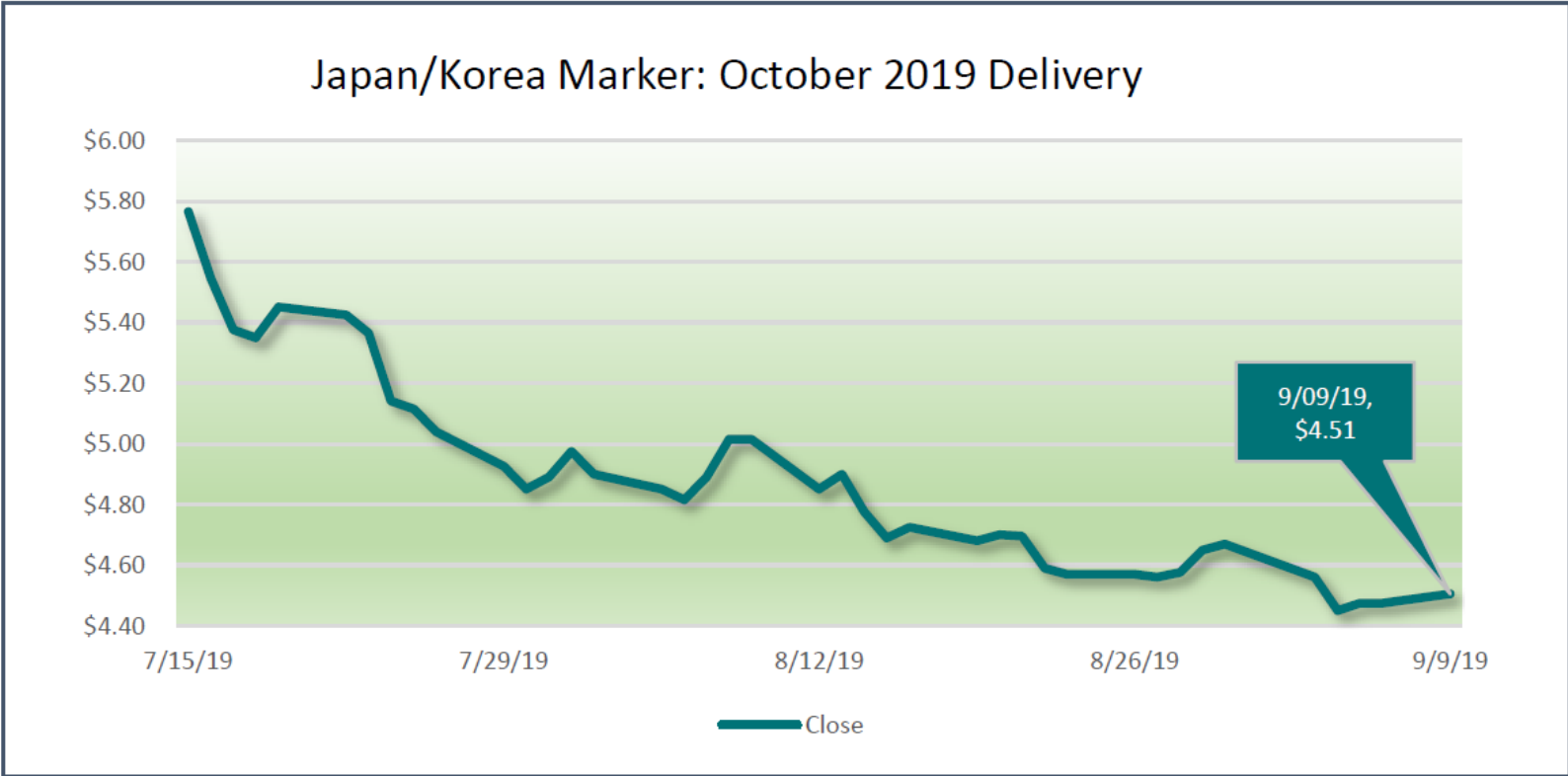


Strip	Close
1 Year	\$2.566
2 Year	\$2.520
3 Year	\$2.507
4 Year	\$2.514
5 Year	\$2.534
Summer 2020	\$2.414
Summer 2021	\$2.346
Summer 2022	\$2.379
Winter 2019/2020	\$2.750
Winter 2020/2021	\$2.643
Winter 2021/2022	\$2.630
Calendar 2020	\$2.533
Calendar 2021	\$2.464
Calendar 2022	\$2.490



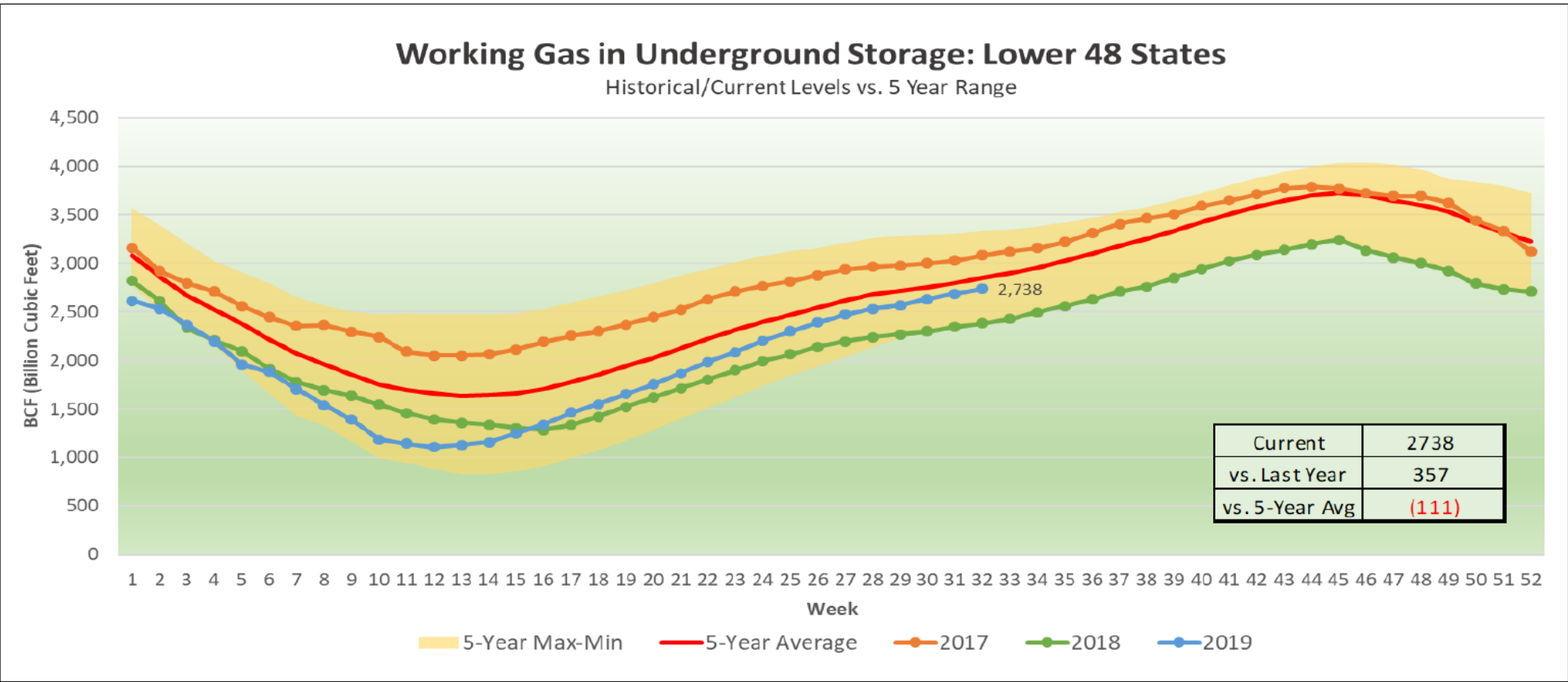
Anything Less Than \$6 is not Constructive for US Exports

LNG Pricing

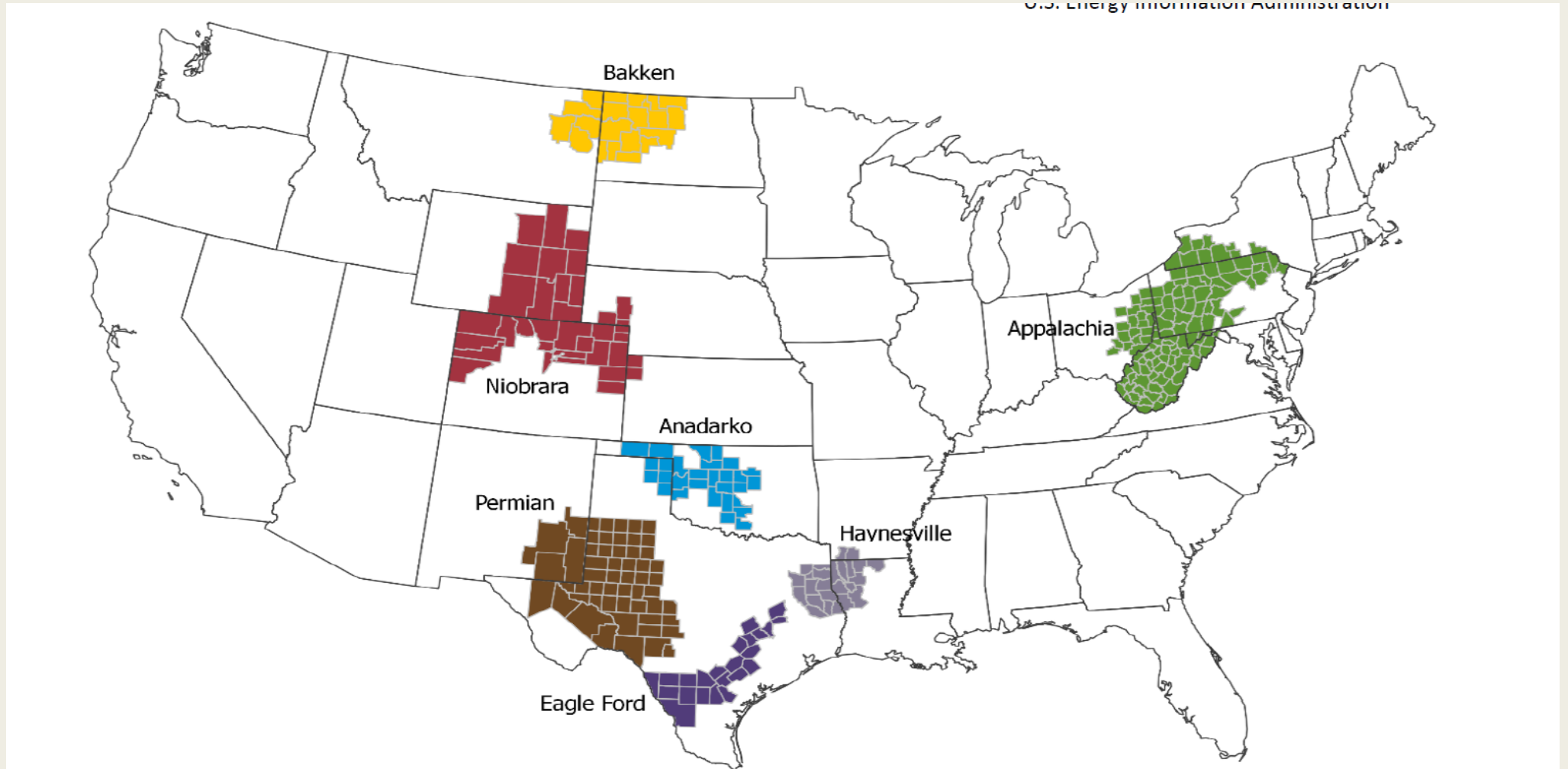


LNG Japan Korea Forwards	
Oct-19	\$4.51
Nov-19	\$5.35
Dec-19	\$6.28
Jan-20	\$6.80
Feb-20	\$6.77
Mar-20	\$6.34
Apr-20	\$5.82
May-20	\$5.64
Jun-20	\$5.43
Jul-20	\$5.45

Storage Injections Lagging 5 Year Avg.



Where is the Most Active Development



Thanks

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- Wyoming Pipeline Authority www.wyopipeline.com
- Wyoming Infrastructure Authority www.wia.org
- Wyoming Energy Authority – coming July 1, 2020