Natural Gas Fundamentals: Focus on Mexico & LNG

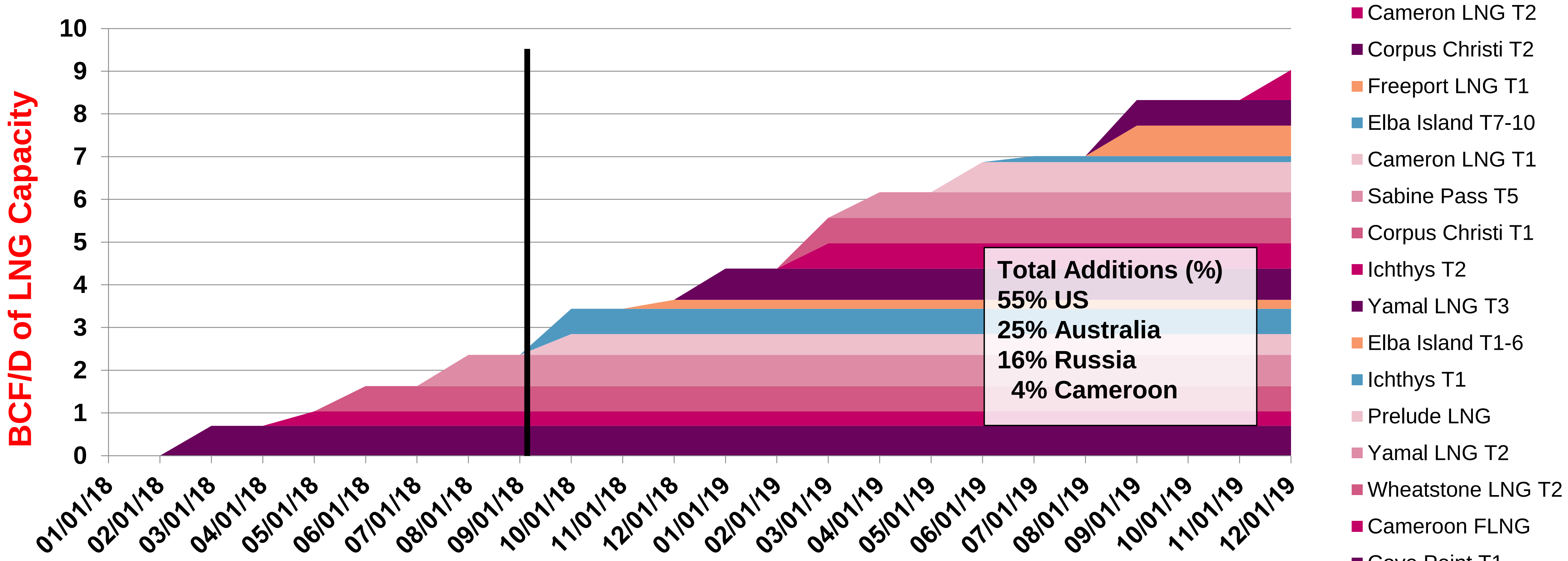
S&P Global Platts Energy Symposium

Ira Joseph, Global Head of Gas and Power Analytics

October 4, 2018

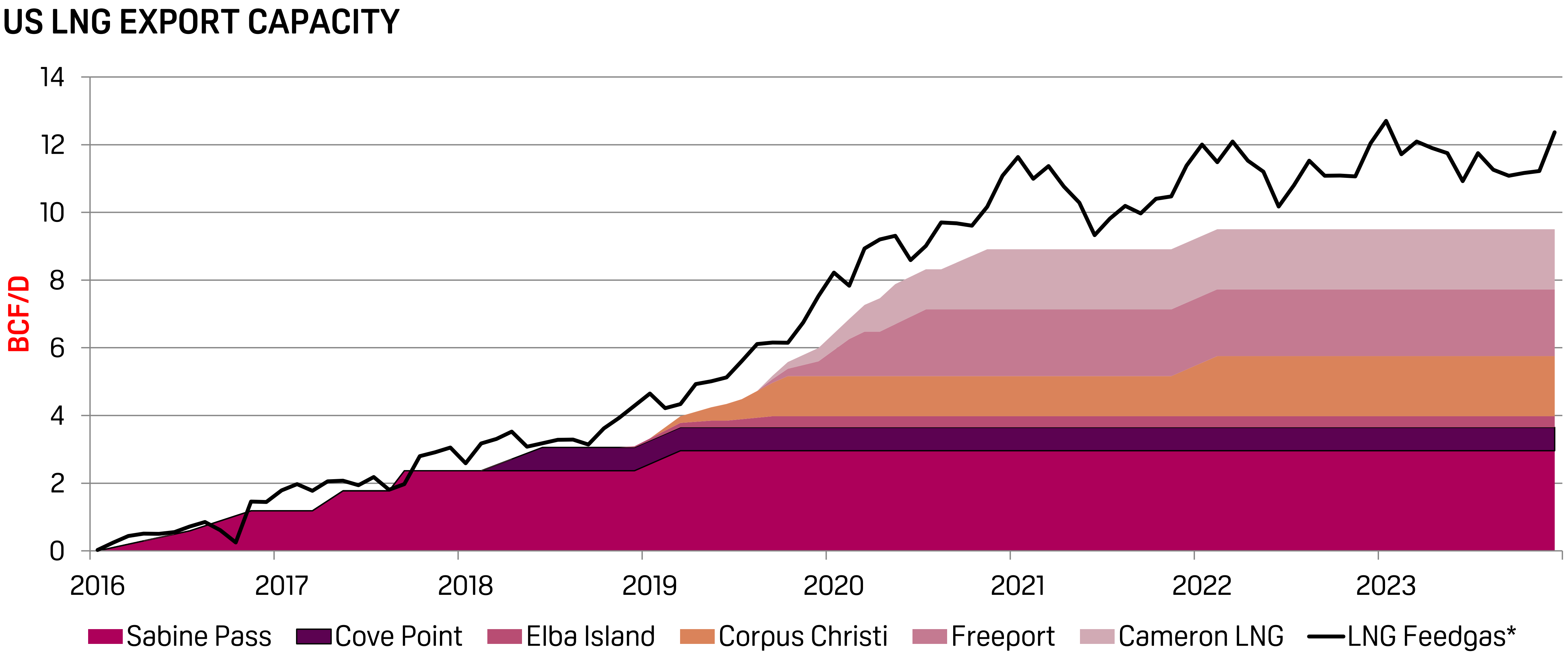
S&P Global
Platts

Another new 7 BCF/D of liquefaction capacity ramps up by the end of 2019



S&P Global
Platts

US LNG export capacity will reach 9.5 Bcf/d by early-2022, supporting roughly 11.7 Bcf/d of feedgas demand



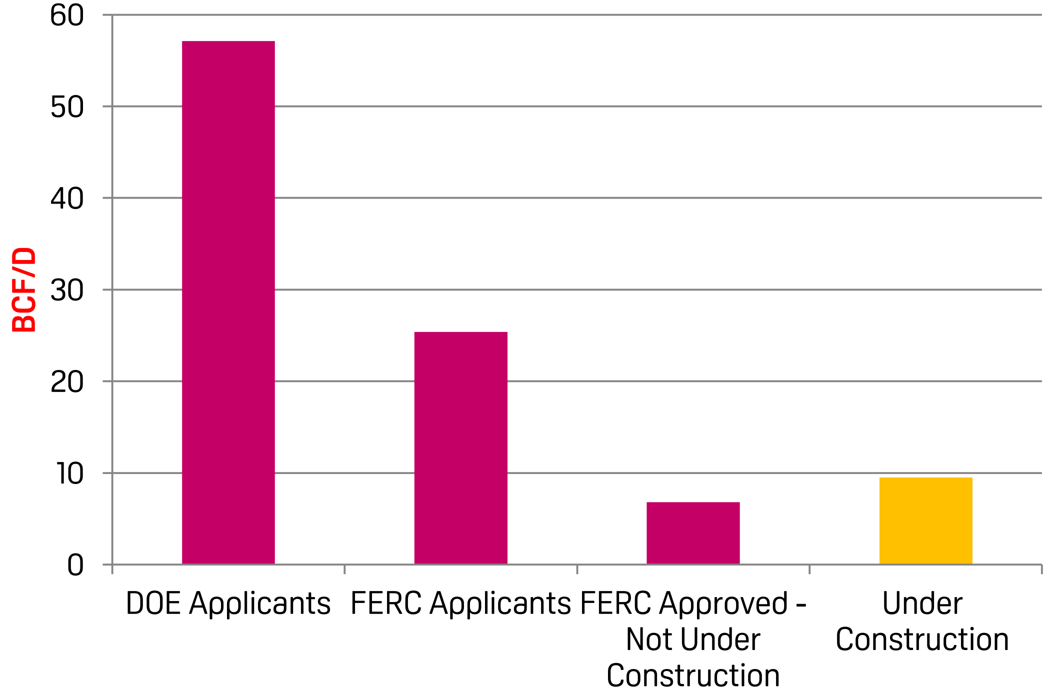
*Feedgas demand assumes peak winter capacity utilizations and 15% facility usage

S&P Global
Platts

Between 2023 and 2025, North America will need to add another ~1.9 Bcf/d of export capacity

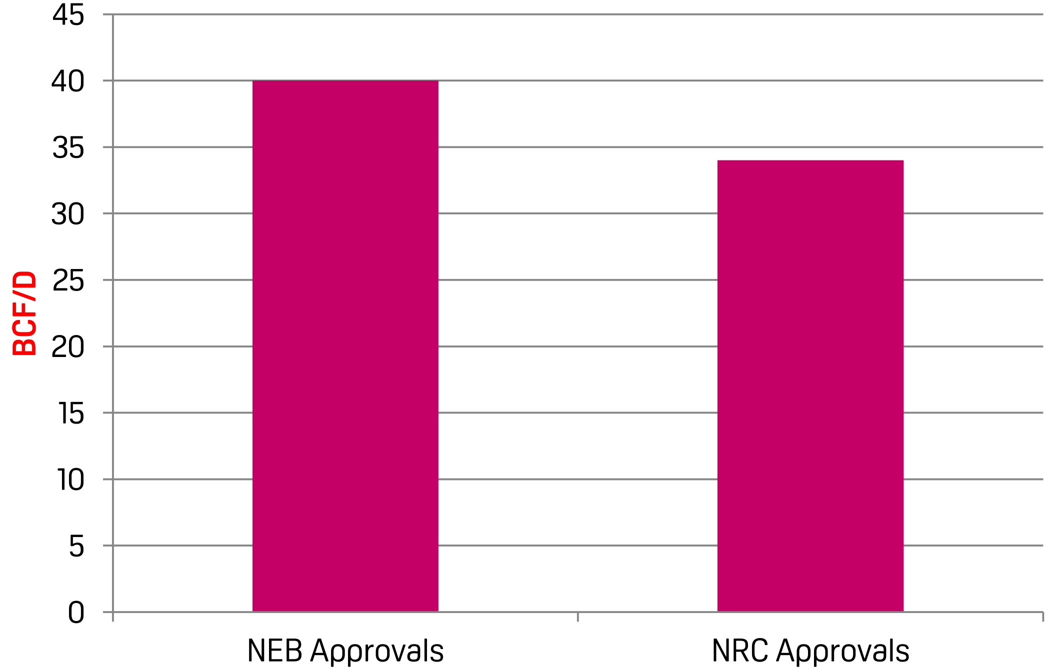
The US has 13 projects proposed to FERC and four which are approved – not under construction

PROPOSED US LNG EXPORT CAPACITY

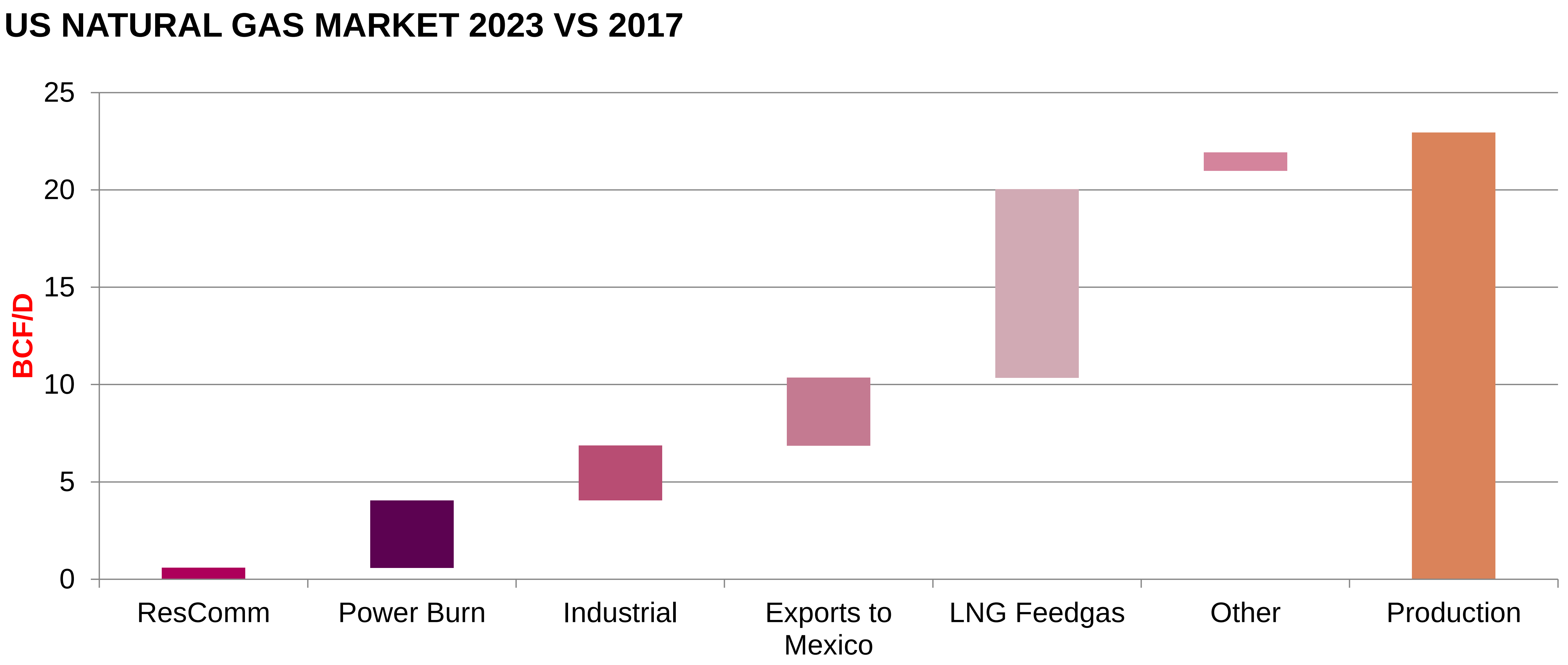


Canada is competing for the same global market share and poses direct competition for buyers

PROPOSED CANADA LNG EXPORT CAPACITY

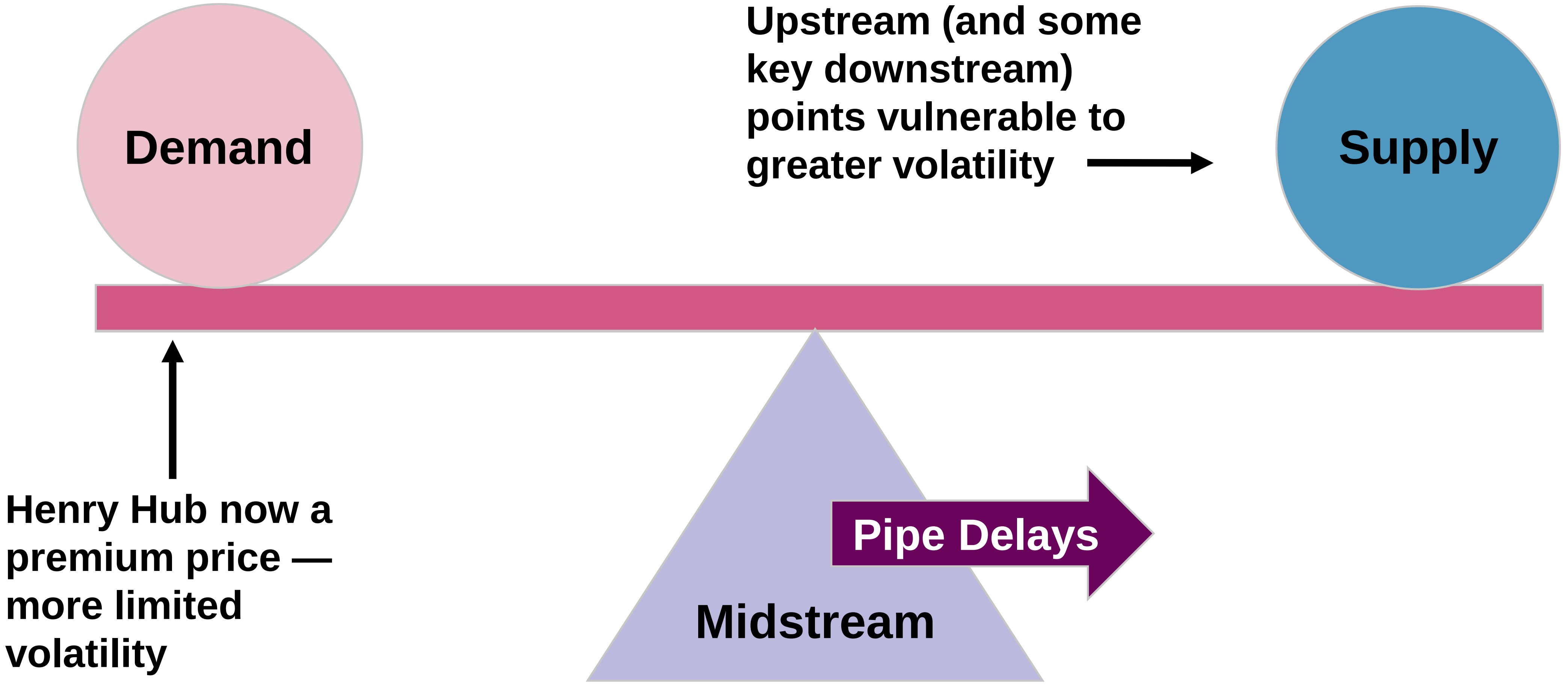


In the next five years, LNG feegas demand will support roughly 9.7 Bcf/d of US production growth

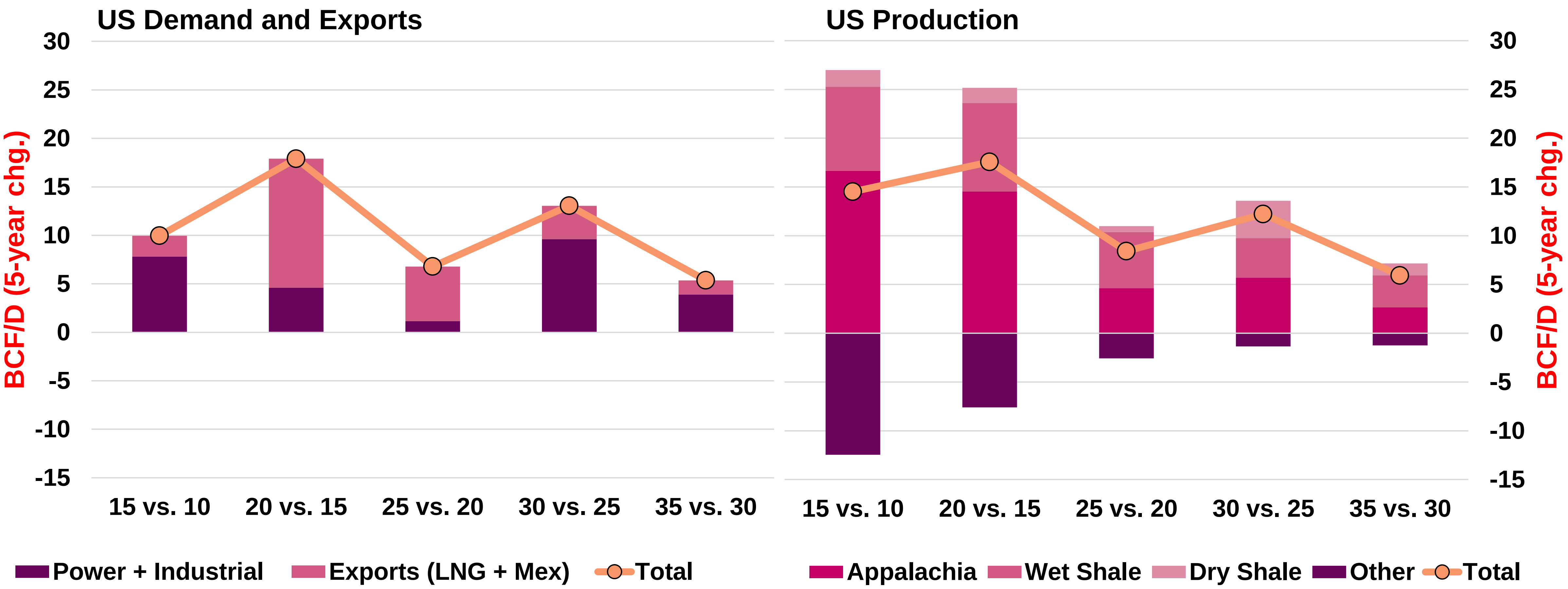


S&P Global
Platts

Midstream constraints shift traditional balancing point toward supply; pipeline constraints threaten basis points vs. Henry Hub

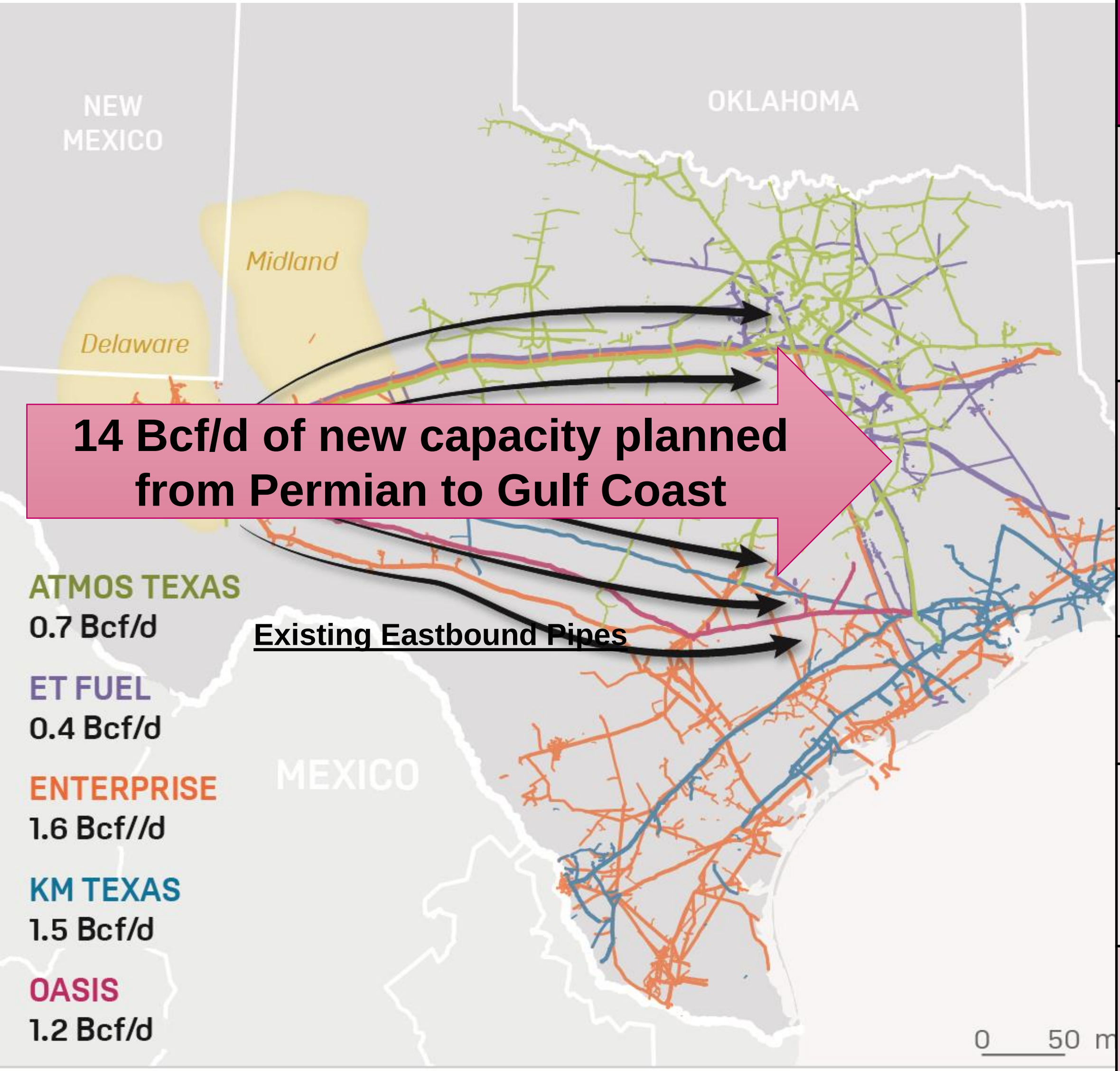


Potential for more LNG and gas-fired EG — post-2025 — favors price appreciation given evolution of gas supply mix



S&P Global
Platts

Lots of Permian pipes in cue, but none next summer

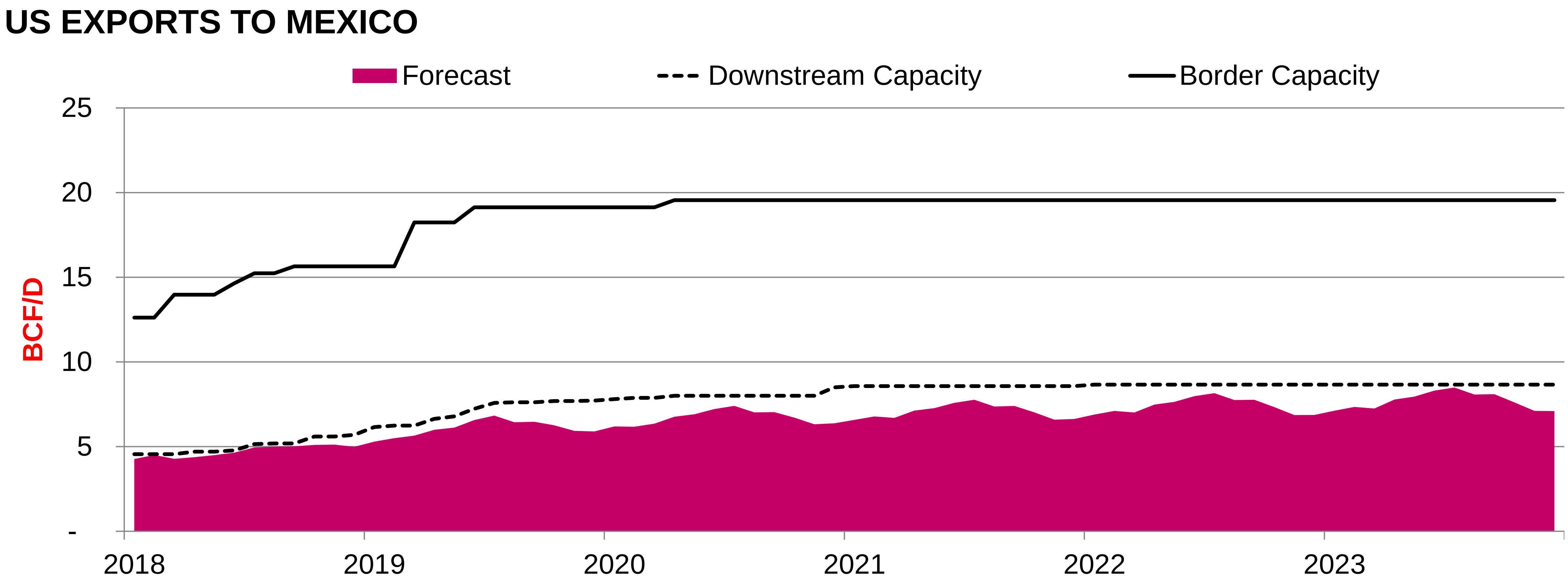


Project	Capacity (Bcf/d)	Delivery	Est. ISD
Gulf Coast Express	1.92	Agua Dulce	Oct. 2019
Pecos Trail	1.85	Corpus Christi	2019
P2K Pipeline	1.5 – 2.0	Katy & Houston Ship	Dec. 2019
Permian Global Access	2.0	Gillis, LA	2022
Bluebonnet Express	2.0	Katy, TX	2020
Permian Highway Project	2.0	East TX	2020
Whistler Pipe Project	2.0	Agua Dulce	2020

Source: Platts

S&P Global Platts

Downstream constraints will limit US exports to Mexico until mid-2019 and remain a chronic impediment to US gas price support



S&P Global
Platts

Mexico added 2.7 Bcf/d of new pipeline in 2018, with another 6.9 Bcf/d of pipe currently under construction

MEXICAN NATURAL GAS PIPELINES

Source: S&P Global Platts Analytics

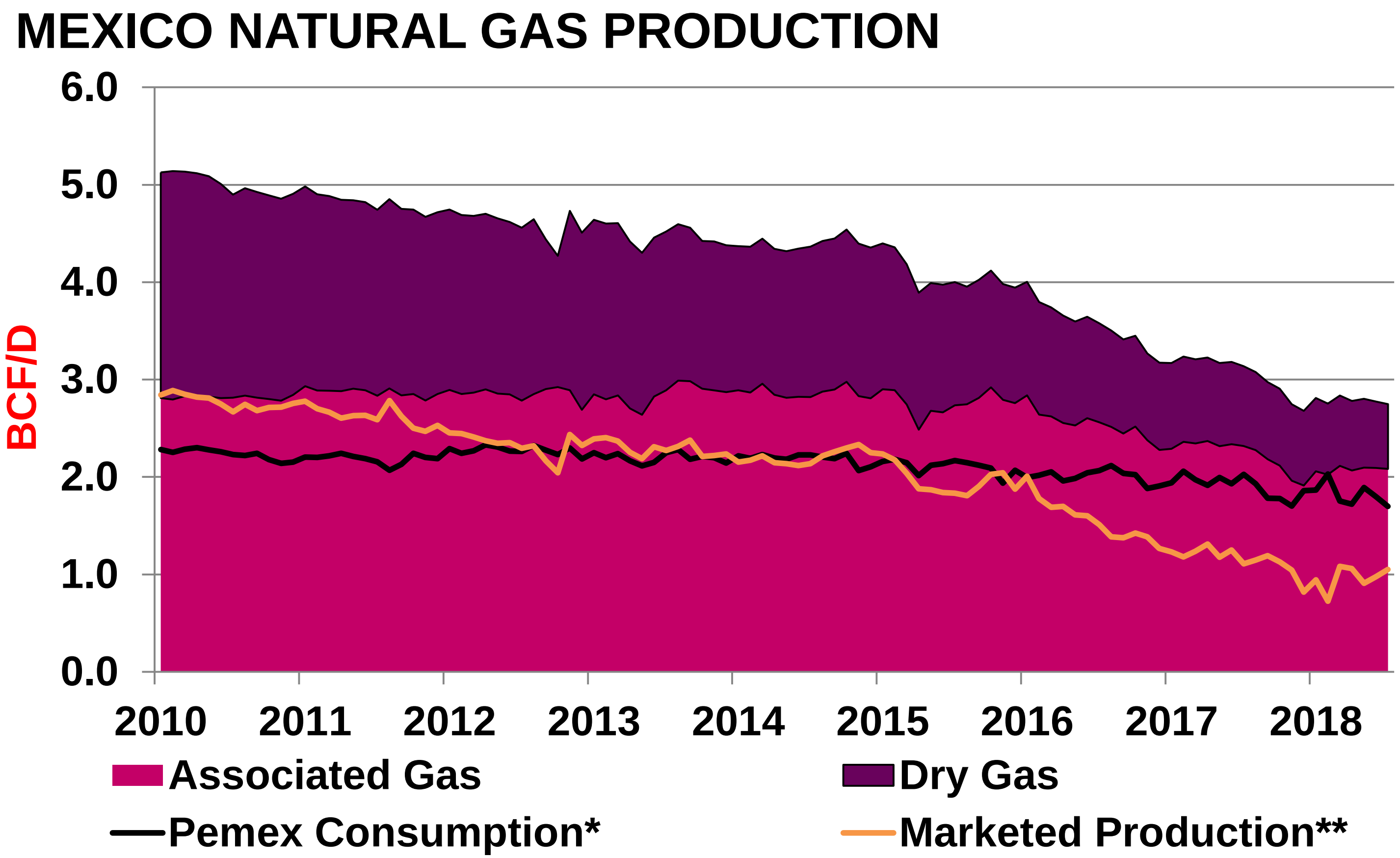
Incremental Pipeline Access			
Pipeline	Import Corridor	Capacity MMcf/d	Start Date
El Encino - La Laguna	West Texas	1,500	Mar-18
El Encino - Topolobampo	West Texas	670	Jun-18
Nueva Era	South Texas	504	Jul-18
La Laguna - Aguascalientes	West Texas	1,189	Nov-18
Villa de Reyes - Aguas. - Guadalajara	West Texas	886	Nov-18
Samalayuca - Sasabe	West Texas	472	Nov-18
Sur de Texas - Tuxpan	South Texas	2,600	Mar-19
Tula - Villa de Reyes	South Texas	886	Jul-19
Tuxpan - Tula	South Texas	886	Dec-20
Added in 2018		2,674	
Under Construction		6,919	

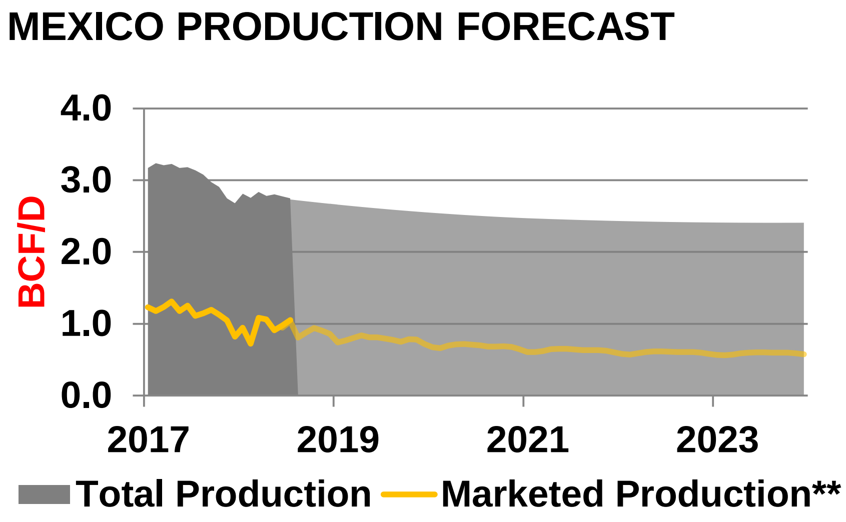
Border Crossing Expansions			
Pipeline	Import Corridor	Capacity MMcf/d	Start Date
Kinder Morgan Border Expansion	South Texas	150	10/18/2017
Tennessee Rio Bravo Crossing	South Texas	100	7/5/2018
Tennessee Pemex Crossing	South Texas	283	7/5/2018
Fermaca El Encino Interconnection	West Texas	150	5/1/2018
Added in 2018		683	

Wahalajara and Sur de Texas are roughly equal two-NET Mexico/Los Ramones Pipelines!

S&P Global Platts

Marketed production averaging below 1 Bcf/d and expected to continue declining through early-2020's



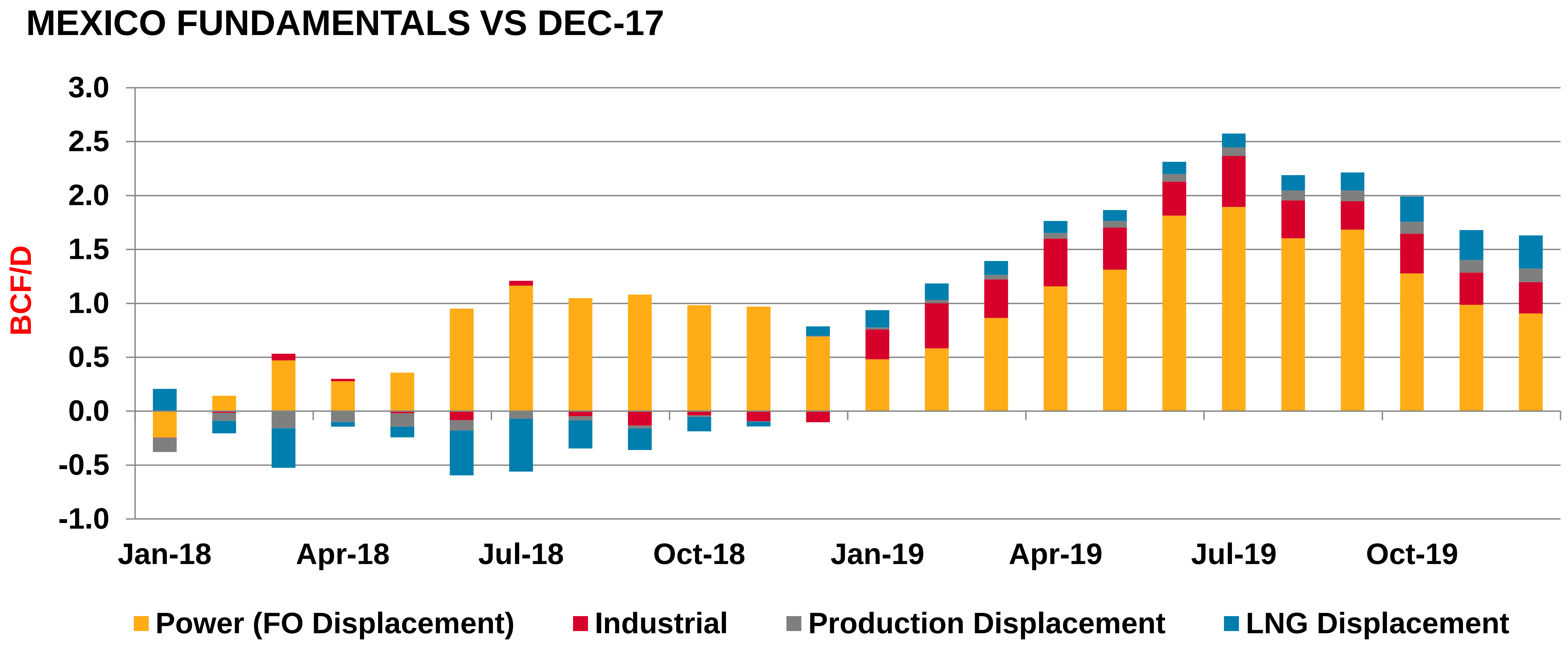


- Production avg. 2.8 Bcf/d in 2018, down 0.4 Bcf/d (13%) YOY
- Marketed Production 0.96 Bcf/d in 2018, down 0.25 Bcf/d (21%) YOY

**Pemex Consumption includes refining, petrochemical, and enhanced oil recovery usage*
***Marketed Production = Total dry gas production minus Pemex Consumption*

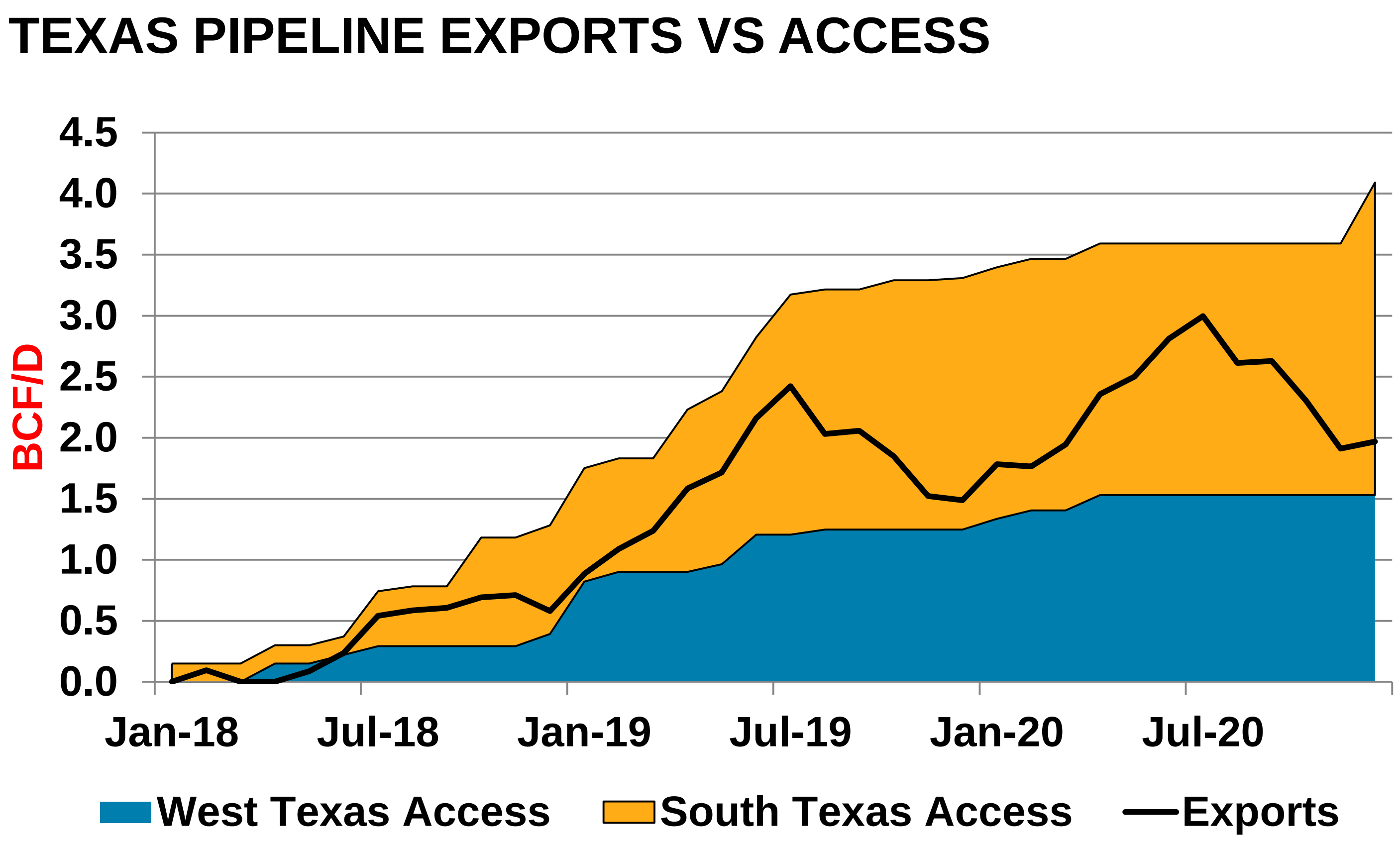
S&P Global
Platts

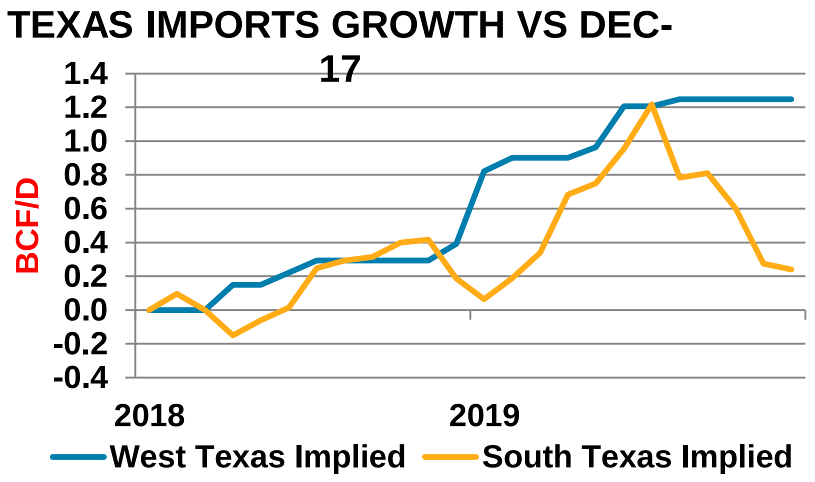
Import growth will be driven by power demand (fuel oil displacement), industrial demand, and LNG displacement



S&P Global Platts

Downstream expansions along West and South Texas import corridors will support rapid import growth starting in early-2019

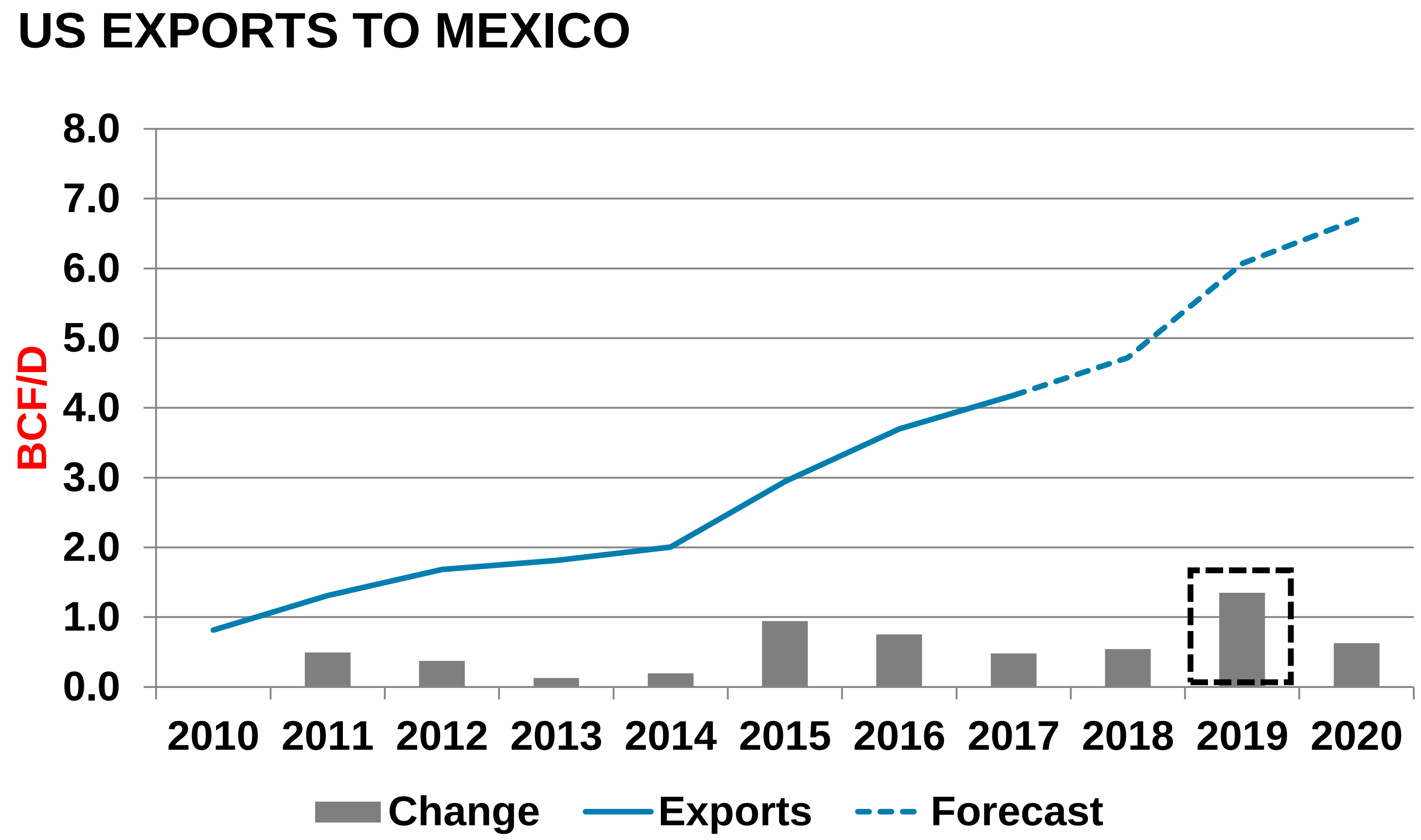




- West Texas will support 1Q2019 export growth via Wahalajara
- South Texas exports pick up in 2Q2019 along Sur de Texas

S&P Global Platts

US exports to Mexico could average over 6 Bcf/d in 2019, 1.4 Bcf/d (29%) Y/Y growth

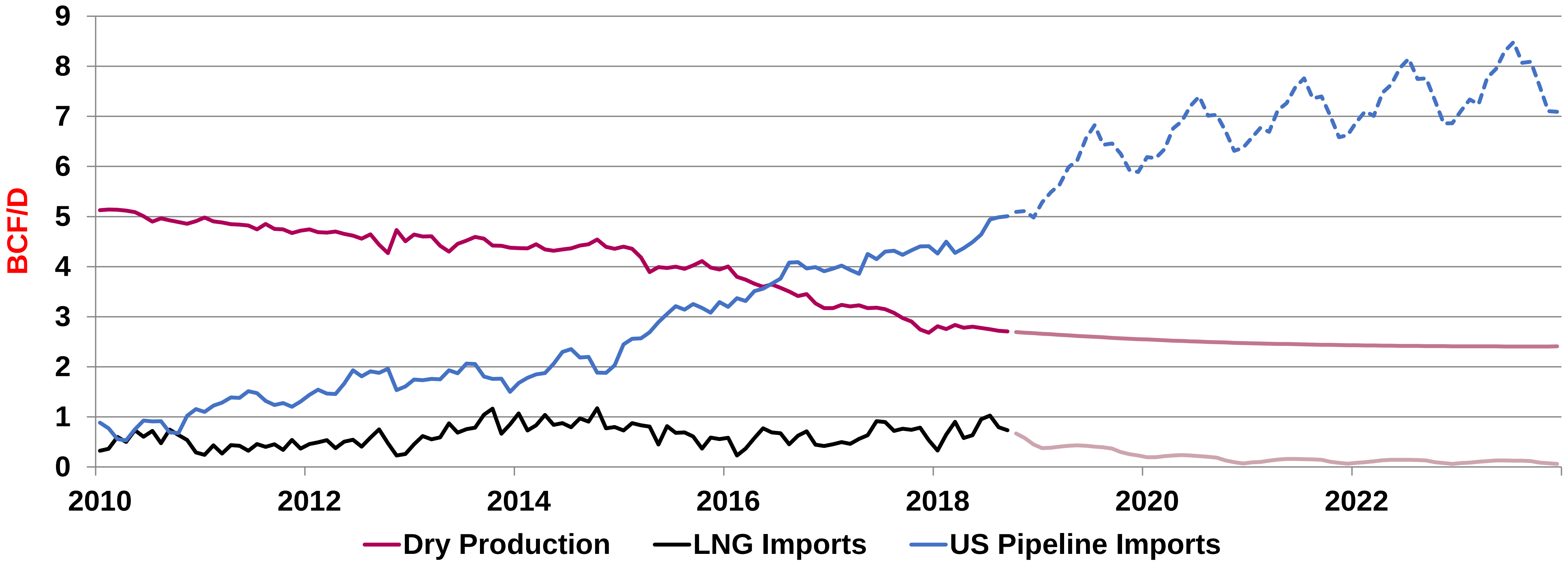


- Despite massive growth in exports, still within the bounds of historic norms. Similar to the startup to the NET Mexico/Los Ramones pipelines in 2015

BUT… YOY (%) change is within historic norms compared to the startup of NET Mexico/Los Ramones

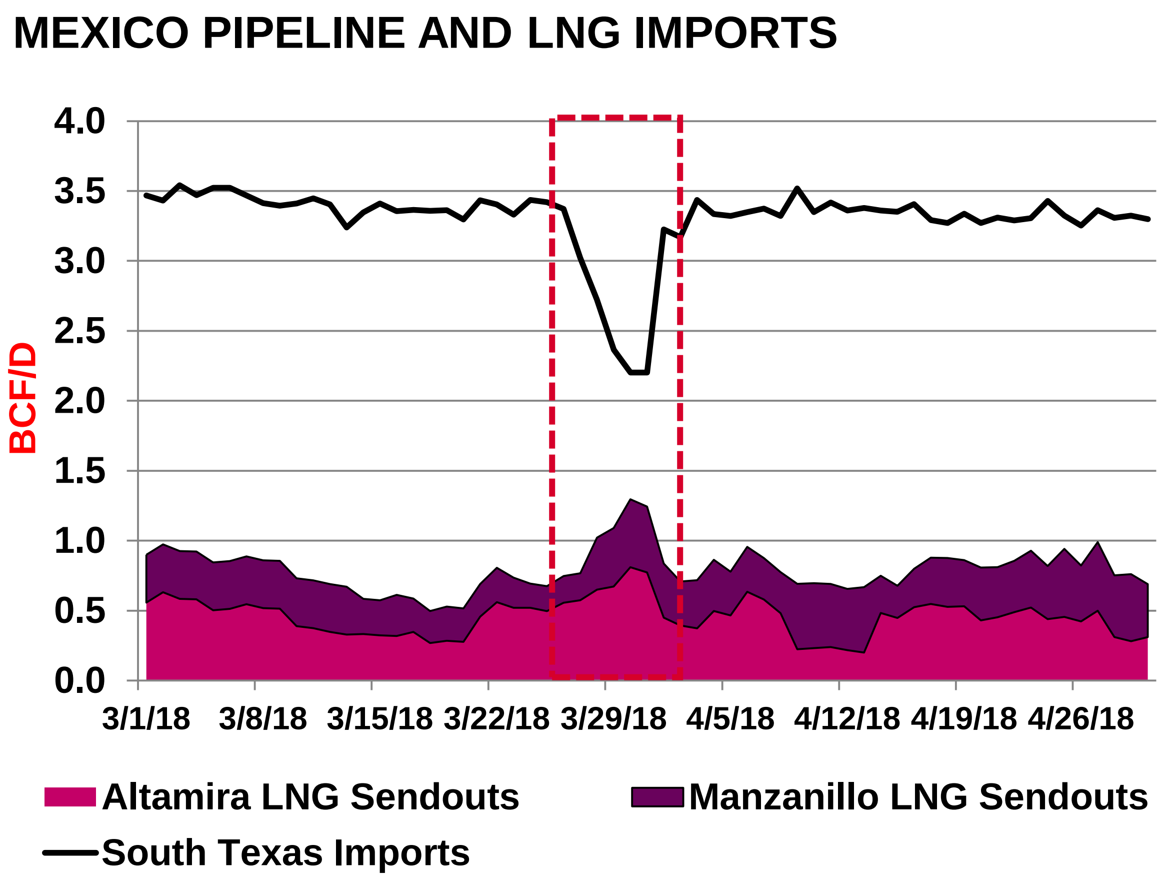
US exports to Mexico expected to reach nearly 7.7 Bcf/d by 2023, with strong seasonal swings driven by Mexico's power sector

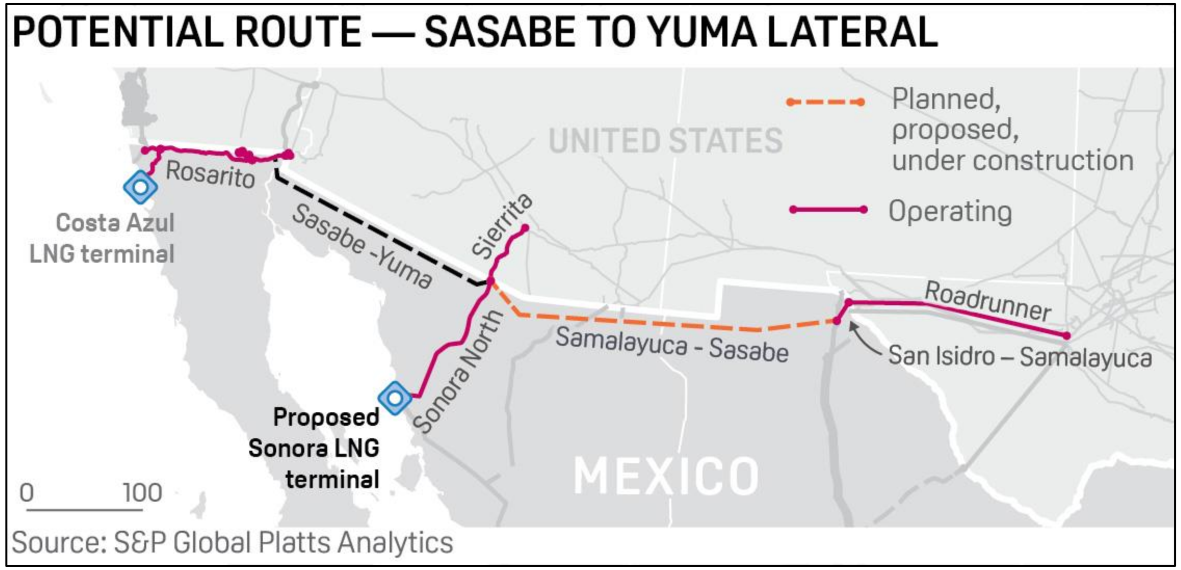
MEXICO NATURAL GAS SUPPLY



S&P Global
Platts

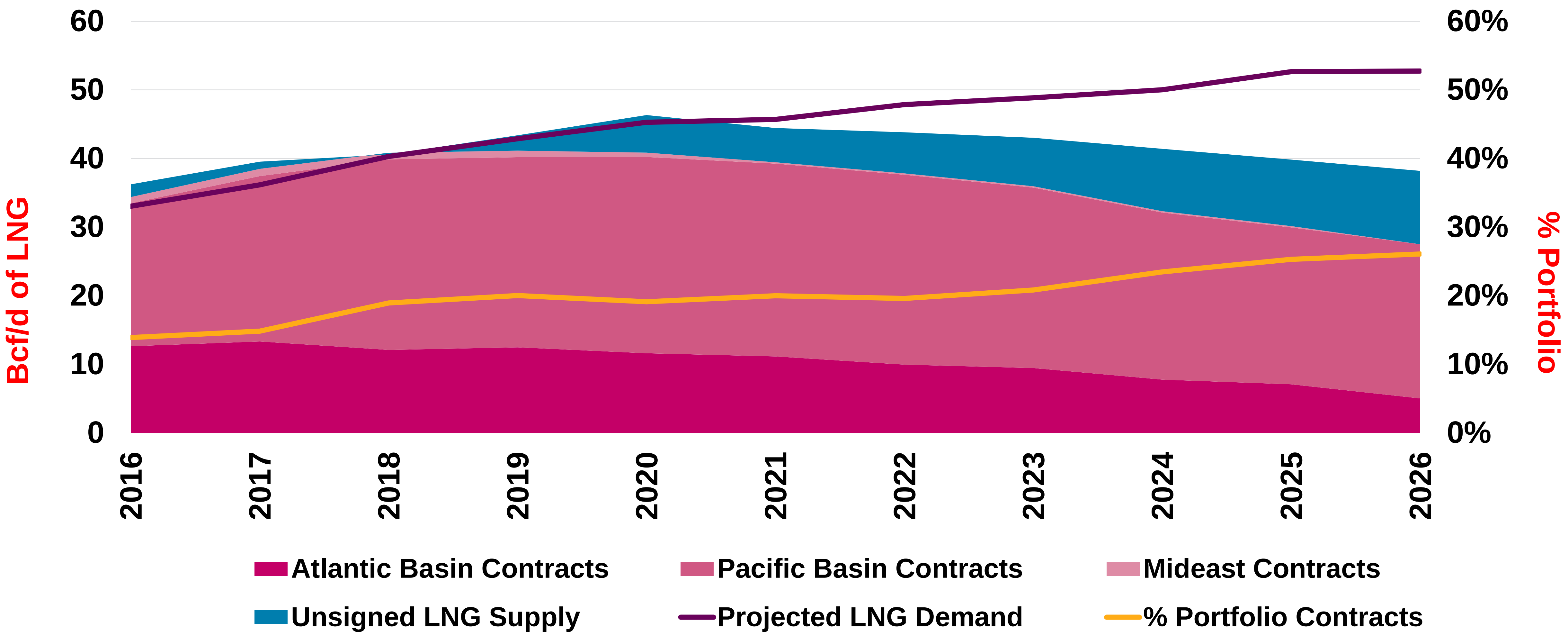
LNG imports will continue to balance supply disruptions. Exports on the way?





- Mexico offers west coast export corridors for Permian basin natural gas
- LNG exports from Costa Azul / Sonora LNG could be a possibility in the “second wave”

Global LNG balances tighter due to lower assumed utilization rate but surplus story still intact through 2021



S&P Global
Platts

Key Takeaways

- **US LNG exports and Mexican imports are the key to Henry Hub, Waha, and South Texas price support**
- **Rapid expansion in cross border capacity opens the possibility of significant increases in US pipeline exports; 1.4 BCF/D next year alone**
- **Midstream constraints in Mexico prevent pipeline flows from being higher or as significant as LNG**
- **Higher pipeline imports by Mexico will displace Mexican LNG imports over time and add more LNG supply to spot market**