LET YOUR CASH FLOW

PREVIEW | FundamentalEdge Report | April 2019

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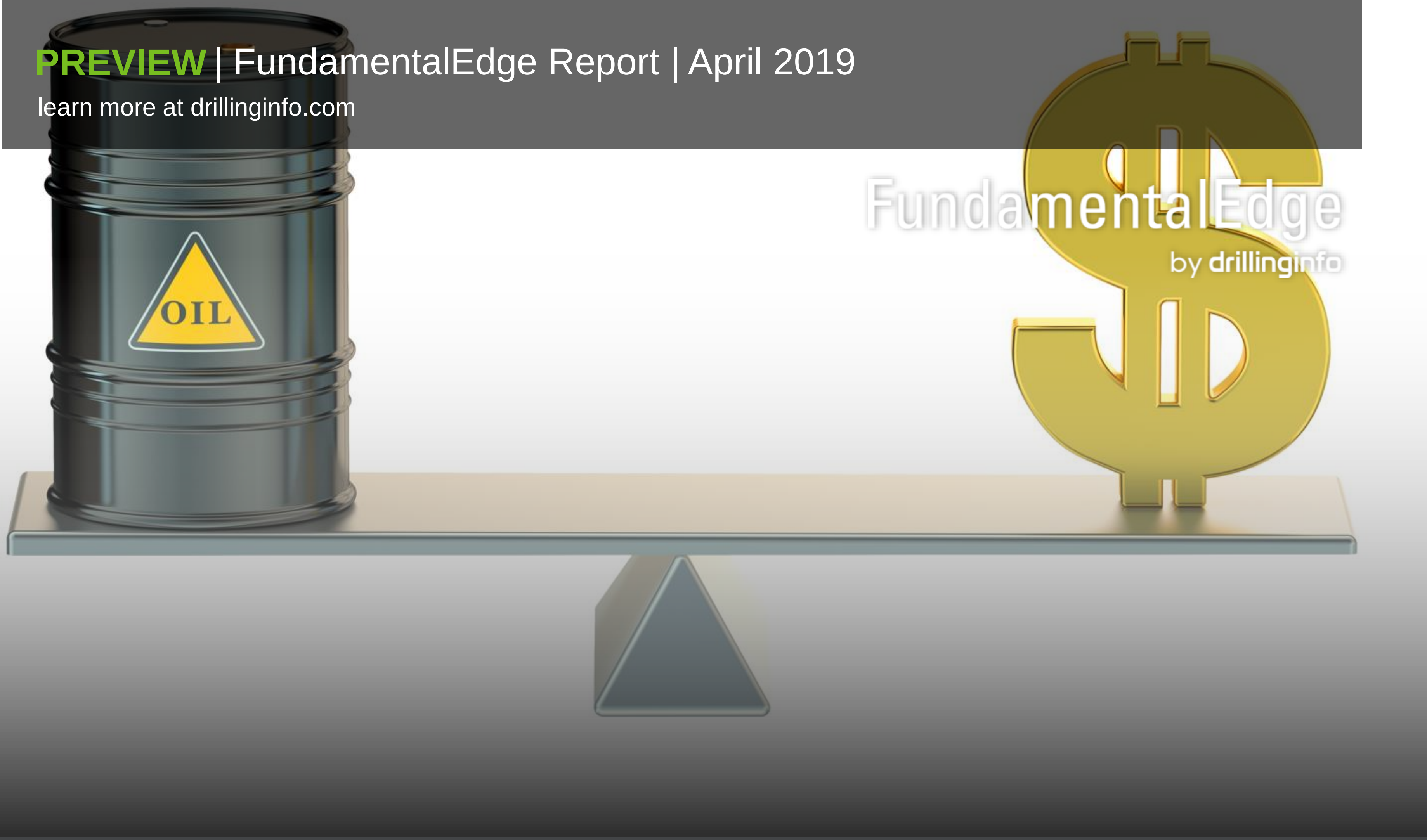


Contents

*This is a **PREVIEW** of a 50+ Page Report*

Key Takeaways

- ***Let Your Cash Flow*** is the 2Q2019 installment of Drillinginfo's FundamentalEdge Series. This market outlook service presents our current view of the oil, natural gas, and NGL markets and where they are headed over the next five years.

- Crude oil prices have recovered from the lows at the end of 2018 as OPEC+ supply cuts and declining Iranian and Venezuelan production reduced the supply overhang. However, further reductions are necessary to balance the market or demand needs to start to pick up. Therefore, volatility in prices is expected as the market finds its way through news on OPEC+ supply cut extensions, Iranian and Venezuelan sanctions, US production increases, and trade wars in the upcoming months.

- Natural gas prices for Henry Hub are currently trading under $3.00/MMBtu. On a regional basis, the story is very different as supply and demand dynamics are causing peaks (PNW and California) and troughs (Permian/Waha) across the US. Even though gas prices are relatively low, production continues to grow. On the demand side, LNG exports will extend the gains as additional projects become operational. Looking ahead, natural gas prices of $2.60-$2.75/MMBtu will balance the market, allowing production to increase at a rate to meet the expected demand growth.

- NGL production continues to climb, with PADD 3 leading the growth. Y-grade pipelines are scheduled to come online in 2019 and 2020, but may have issues running full with limited available frac capacity. Frac capacity along the Gulf Coast is running full, and projects aren't expected to relieve the constraint until 2020. A slate of petrochemical projects is expected to hit the market by 2024, increasing ethane feedstock demand by ~1.36 MMBbl/d. Once frac capacity is relieved, export capacity could be the next bottleneck.

- With more demands from investors to live within cash flow and return cash to shareholders, most E&Ps released guidance with lower anticipated capital expenses than last year, with the exception of some larger producers and newly merged companies. Despite reduced CAPEX, almost all operators and consensus estimates show an increase in production from 2018 averages. How are they reducing operations but still increasing production? Through a combination of efficiencies, lower expected service costs, and a focus on more established, predictable assets.

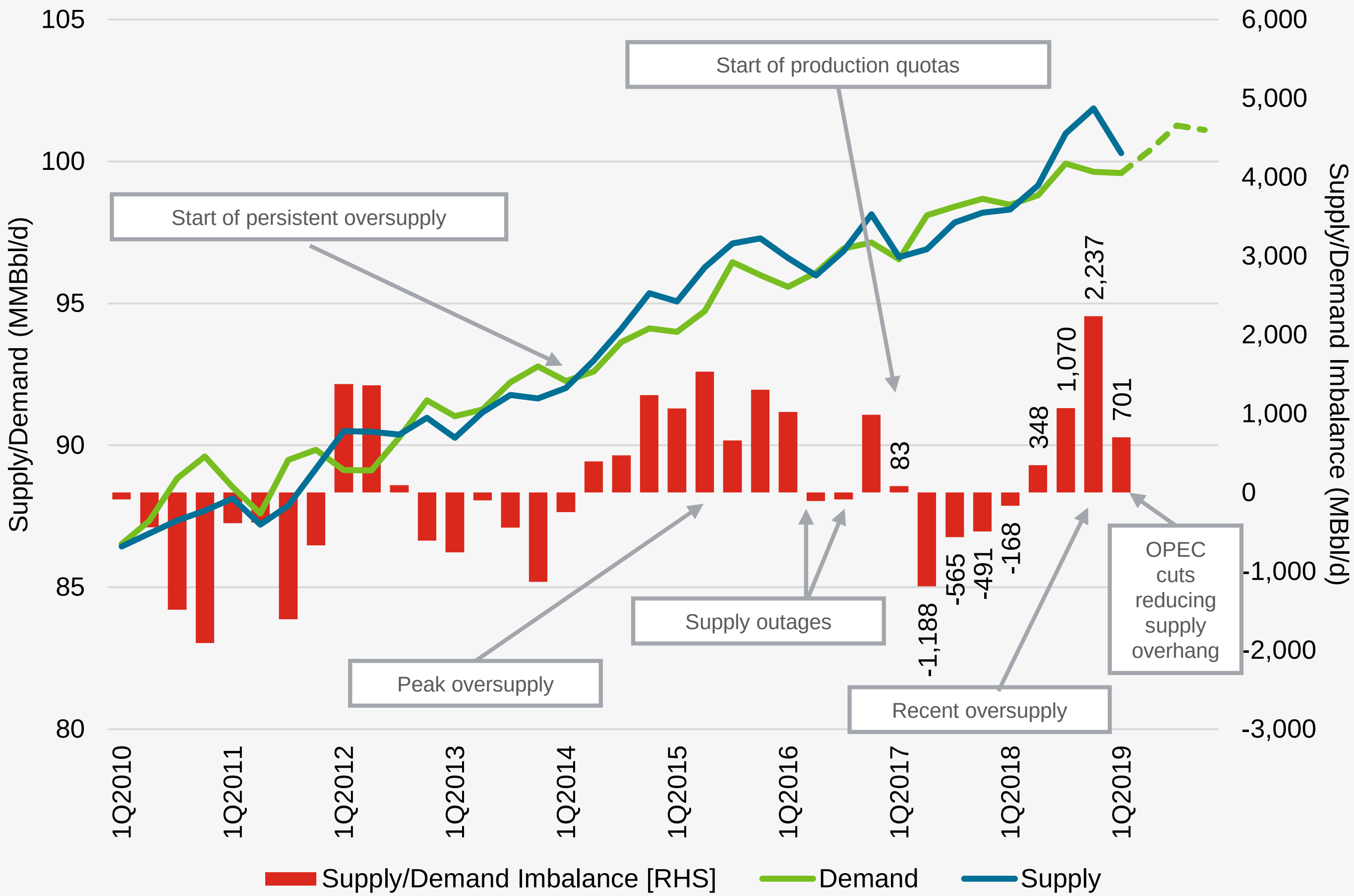
Global Oil Supply and Demand

Had the speculative sector considered the fundamentals, they might have been spared the blushes, as the oversupply had resurfaced in the last three quarters of 2018.

The most recent supply number for the third quarter showed a surplus of almost 2.3 MMBbl/d. The oversupply led OPEC to once again intervene in the crude oil markets in order to support prices. The OPEC+ 1.2 MMBbl/d announced cuts at the end of 2018 along with declines from Venezuela and Iran helped reduce the supply overhang drastically during Q1'19; however, the surplus still exists and OPEC may need to extend or deepen its existing quotas in order to achieve higher prices.

CHART 3

Global Supply and Demand



Source: IEA MODS

Venezuela’s Spiraling Production Decline

The situation on the ground in Venezuela has led to a steep, unexpected decline in the country’s production.

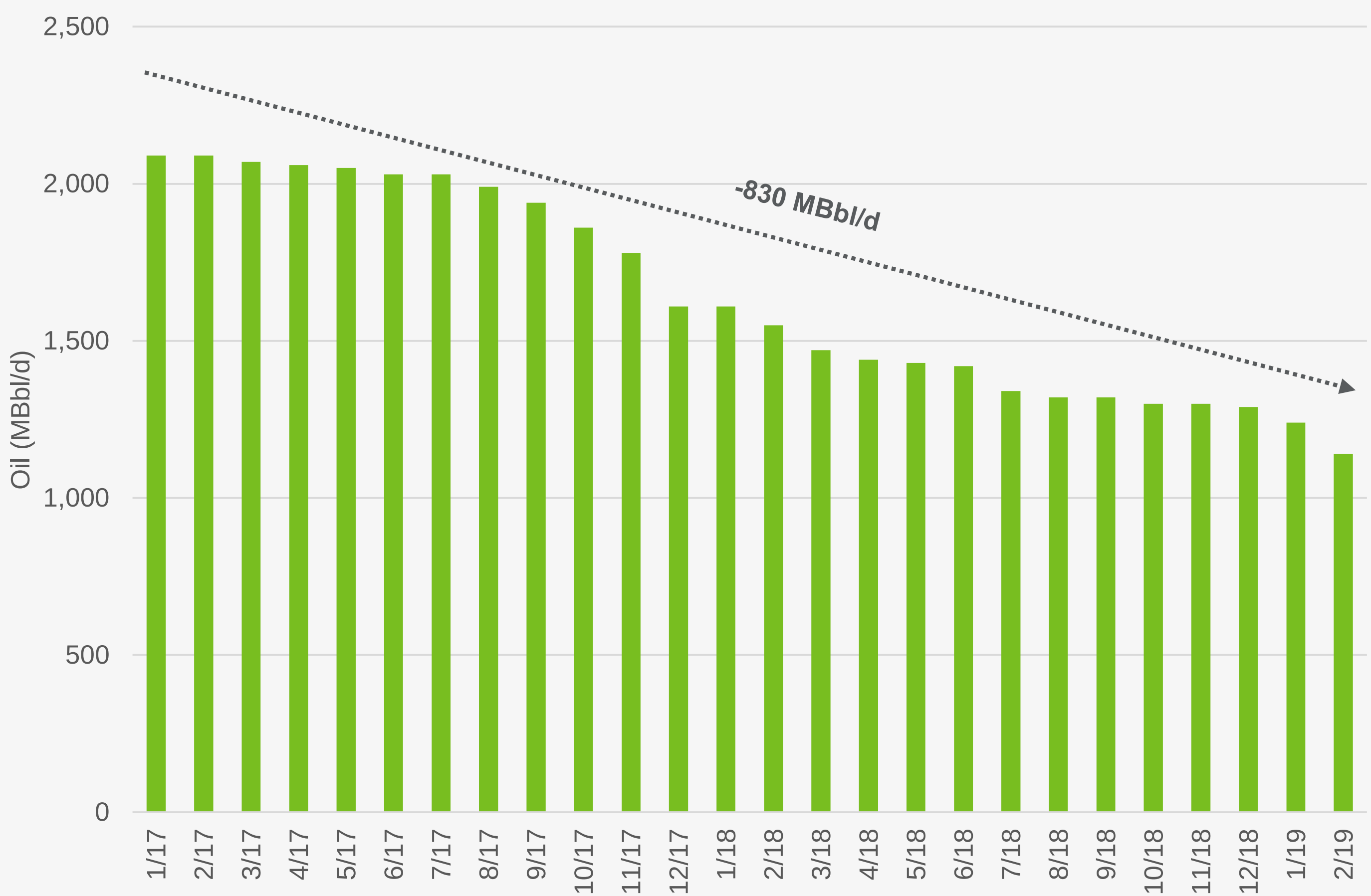
Venezuelan production has dropped 950 MBbl/d from the peak since the quotas were instated in July.

The US sanctions that were announced on January 2019 and the recent power outages affecting country’s crude exports have caused the production levels to further decrease in recent months.

Further declines are still possible as the country remains burdened by political turmoil and humanitarian crises and is facing further sanctions.

CHART 4

Venezuela Crude Oil Production



Source: IEA MODS

Russian Production

Russia has been the largest contributor to the non-OPEC supply cuts. It cut as much as 300 MBbl/d from its 2016 peak levels during the initial quota period.

In April, as the OPEC-12 and the non-OPEC members tried to fill in the supply gap left by Venezuela and Iran, Russia contributed ~450 MBbl/d of growth in a short period of time.

Russia agreed to partake in the new round of quotas, but has elected to reach compliance over the six-month period rather than right away in January. Recently Russia stated that it would help Saudi Arabia deepen the cuts if necessary to reduce the supply surplus.

Even with the volumes Russia has agreed to cut, it will maintain at levels near the highs of 2016. If the quotas are not extended, the expectation is for further growth in the second half of the year.

CHART 7

Russian Oil Production

Source: IEA MODS

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US Rig Count: Trough to Peak

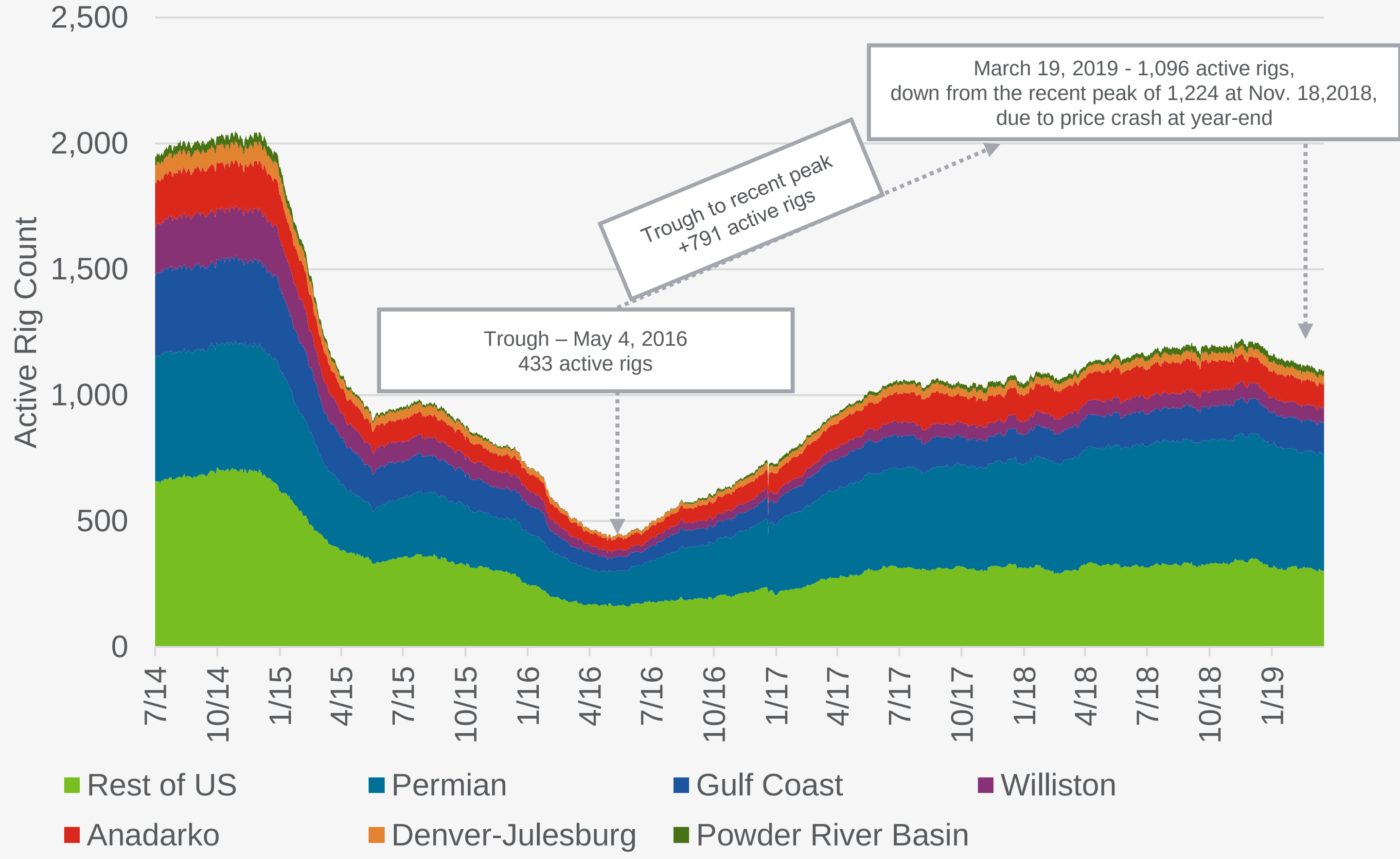
The great economics have driven the increase in rig count in the US.

The low for the rig count was on May 4, 2016, when only 433 rigs were active. Rig count reached its peak at 1,224 during November 2018 and has declined to 1,096 since then due to the price crash at year-end that took prices below $45/Bbl levels.

From the low to the recent number, 663 rigs have been added to the active fleet, of which more than 50% made their way into the Permian and Anadarko basins.

CHART 10

Rig Count by Basin



Source: DI Rig Analytics

US Production: Growth in Light Crude Oils

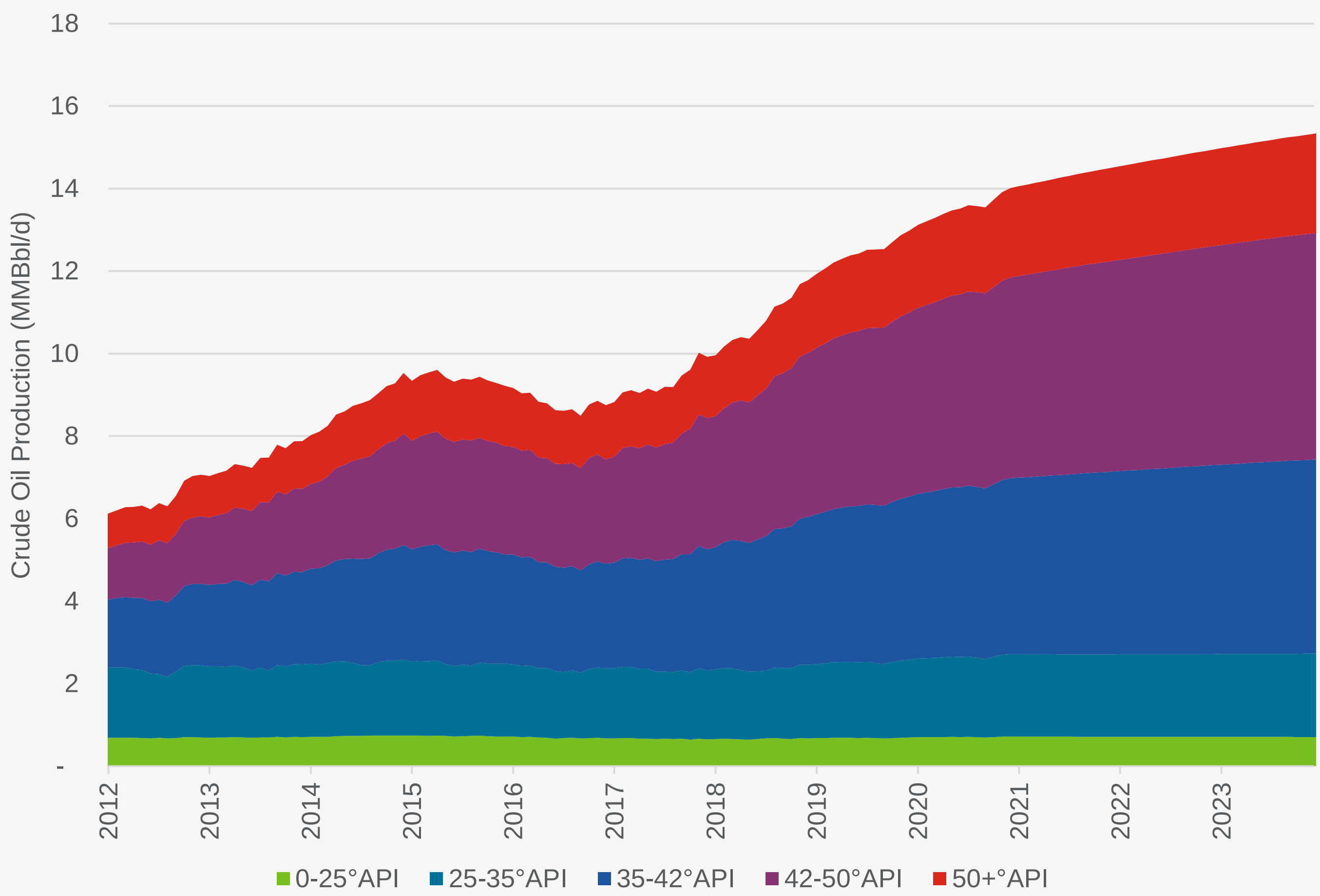
The growing crude oil production continues to be of a light, sweet quality. The light, sweet crude oil is a better fit for refineries abroad that are not as suited for the heavy, sour grades as the complex US. refining fleet is. This is the main reason why exports continue to grow although the US. is still importing 6.5-7.5 MMBbl/d of crude oil.

The heavier crudes will continue to flow to our complex refining fleet, while the lighter crudes will find themselves a home in refineries abroad.

The impending change on the IMO sulfur regulations in 2020, which will bring the sulfur specification down from 3.5% to 0.5% for open sea vessels, will make US. crude more attractive to the less complex refineries that still produce a lot of bunker fuel oil from their legacy feedstocks and need to either retool to further refine the heavy end of the barrel or switch to a lighter, sweeter crude supply. At the same time, the heavier barrels will be discounted, giving an advantage to the complex refiners with coking units to reap the benefits of discounted feedstock.

CHART 12

US Production by Crude Quality



Source: DI ProdCast

US Breakevens – Associated Gas Dominates

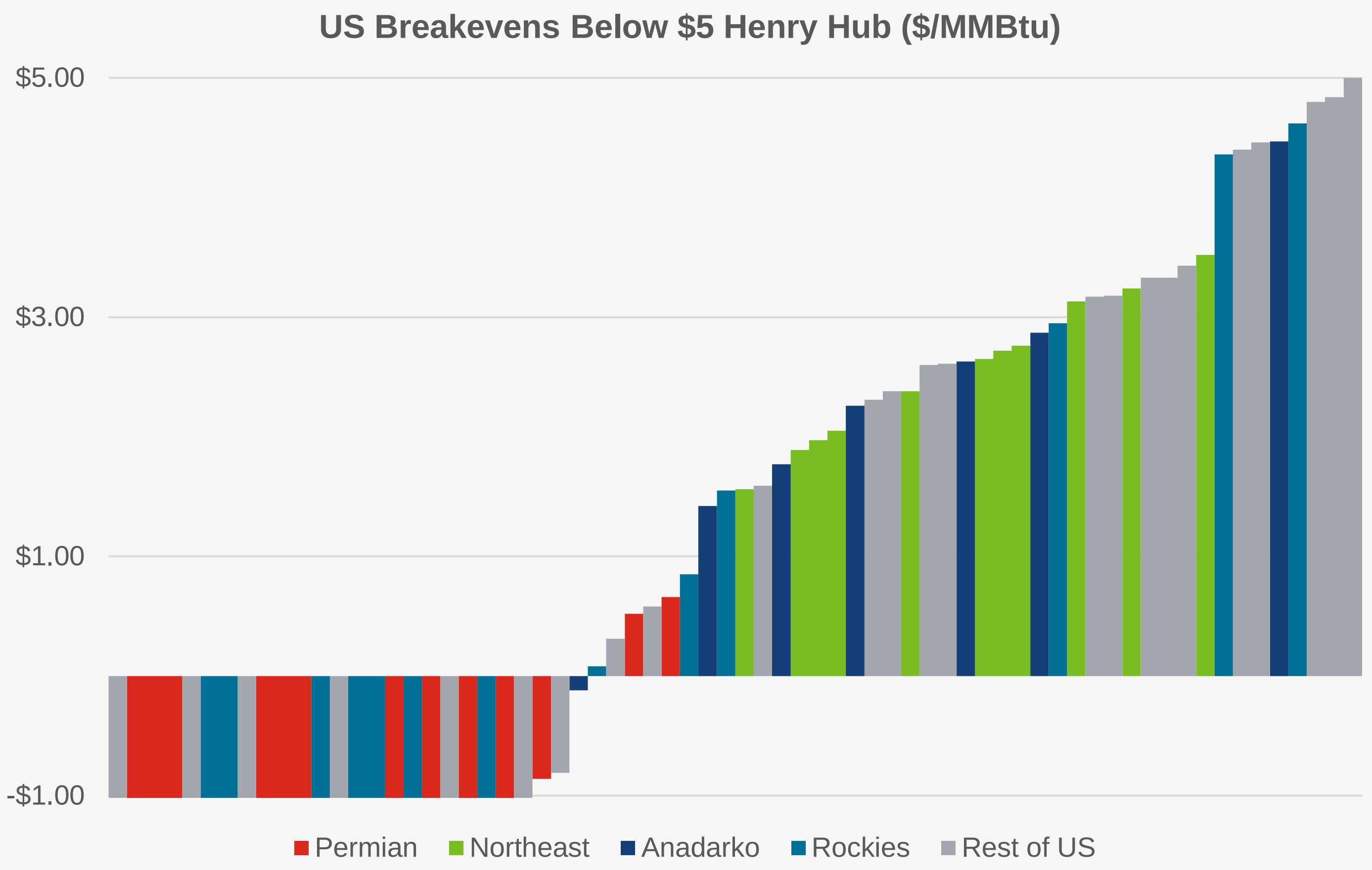
US basins have great economics that result in continued growth expectations for production.

Chart 23 shows all the producing areas (basin-field-tier combinations) in the US that get at least 15% rate of return at HH prices below $5/MMBtu.

The Permian Basin has most of the associated gas production, while the Northeast is a gas play with very low breakeven costs.

CHART 23

US Natural Gas Breakevens



Source: DI ProdCast

2019 Average – Regional Natural Gas Flows

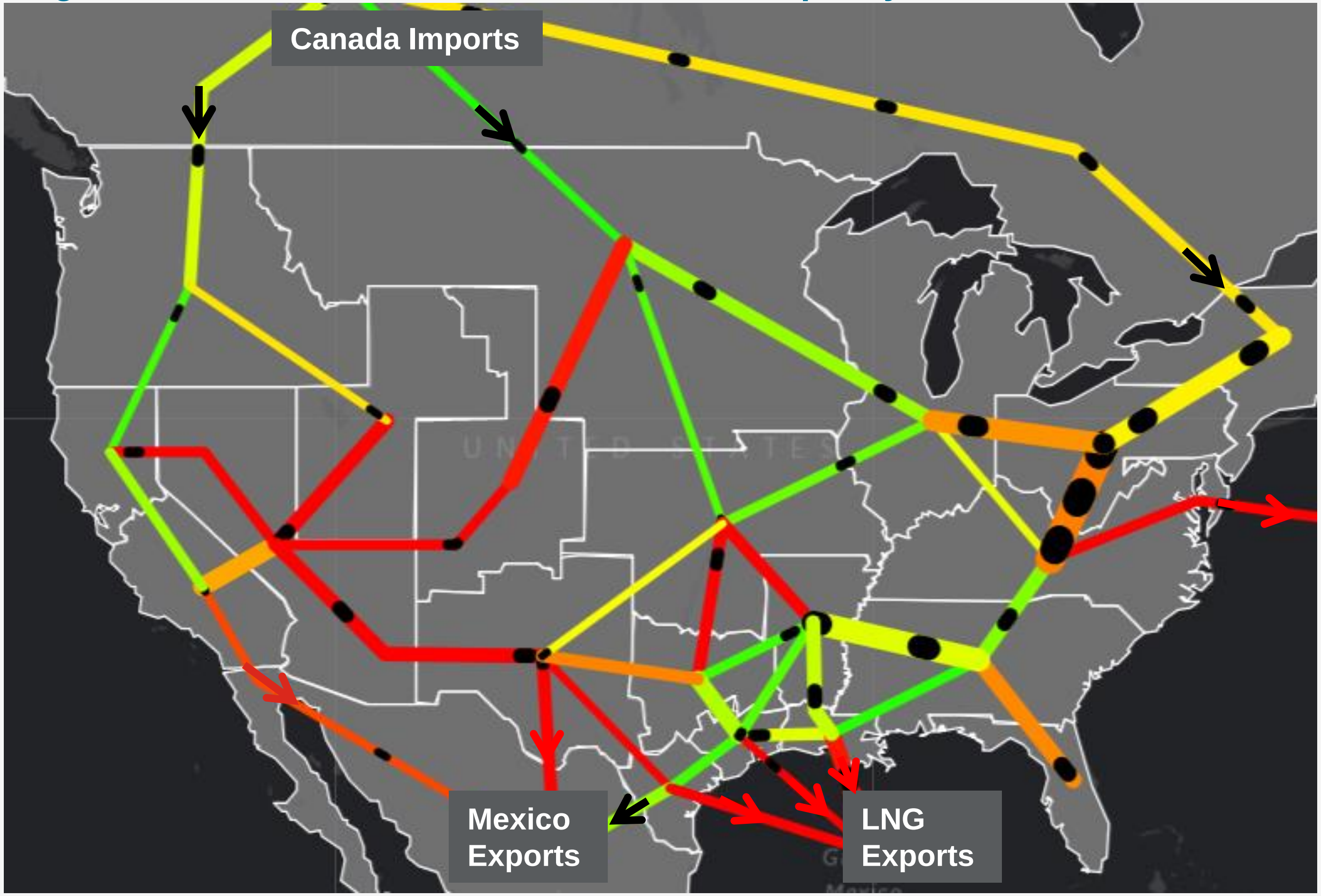
As natural gas production grows, transportation to final destination markets has become a challenge for some areas within the US.

Chart 24 shows capacity utilization by region, with red representing flows approaching capacity while green means plenty of capacity available in that path.

On an average annual basis, the West, Permian, and LNG exports are facing capacity constraint in 2019.

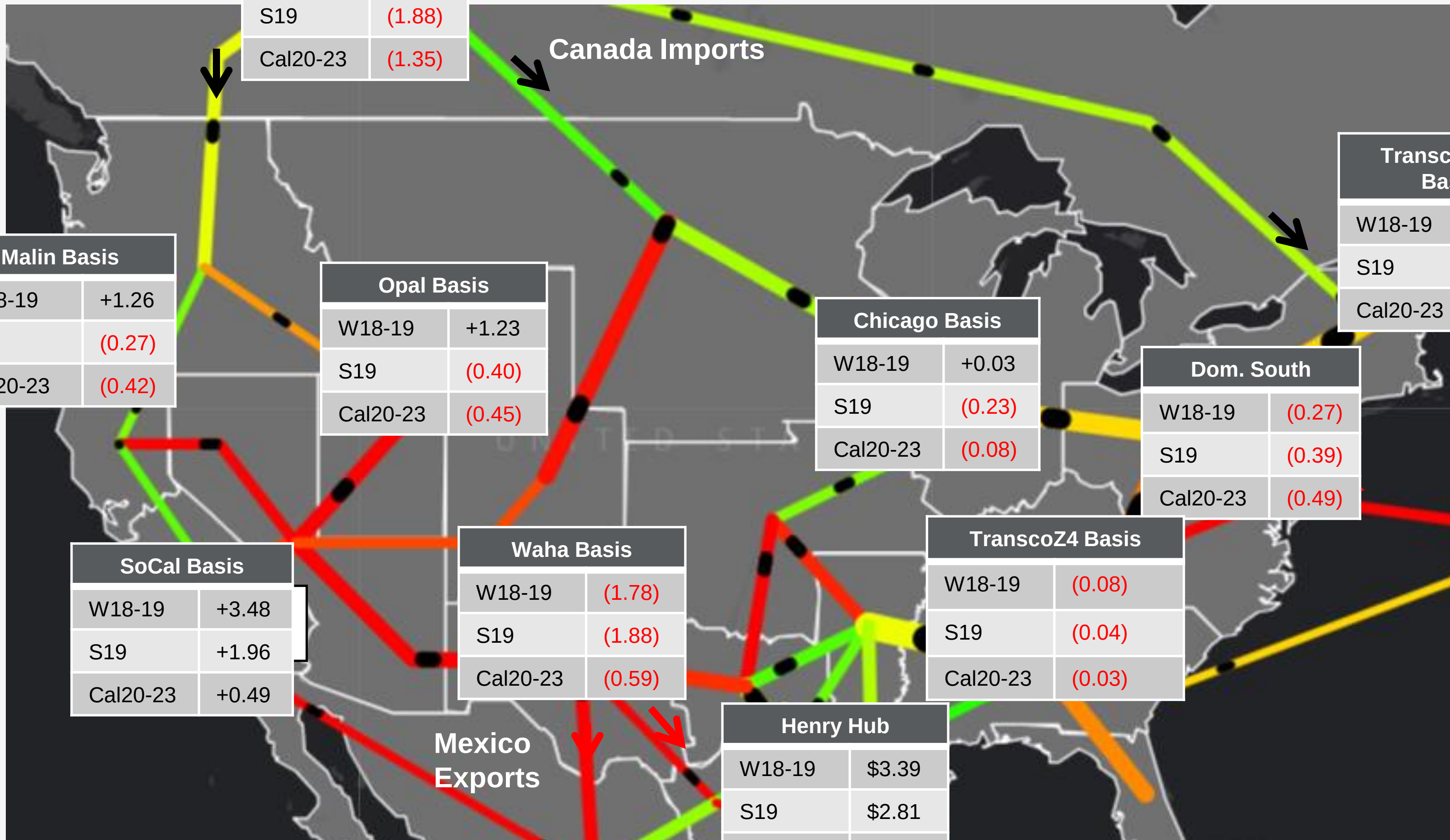
CHART 24

Regional Path and Utilization of Natural Gas Capacity



Source: DI OptiFlo Gas

Price Basis – West vs. East



AECO Basis	
W18-19	(1.69)
S19	(1.88)
Cal20-23	(1.35)

Malin Basis	
W18-19	+1.26
S19	(0.27)
Cal20-23	(0.42)

Opal Basis	
W18-19	+1.23
S19	(0.40)
Cal20-23	(0.45)

Chicago Basis	
W18-19	+0.03
S19	(0.23)
Cal20-23	(0.08)

TranscoZ6NY Basis	
W18-19	+0.55
S19	(0.23)
Cal20-23	+0.81

Dom. South	
W18-19	(0.27)
S19	(0.39)
Cal20-23	(0.49)

SoCal Basis	
W18-19	+3.48
S19	+1.96
Cal20-23	+0.49

Waha Basis	
W18-19	(1.78)
S19	(1.88)
Cal20-23	(0.59)

TranscoZ4 Basis	
W18-19	(0.08)
S19	(0.04)
Cal20-23	(0.03)

Henry Hub	
W18-19	$3.39
S19	$2.81
Cal20-23	$2.71

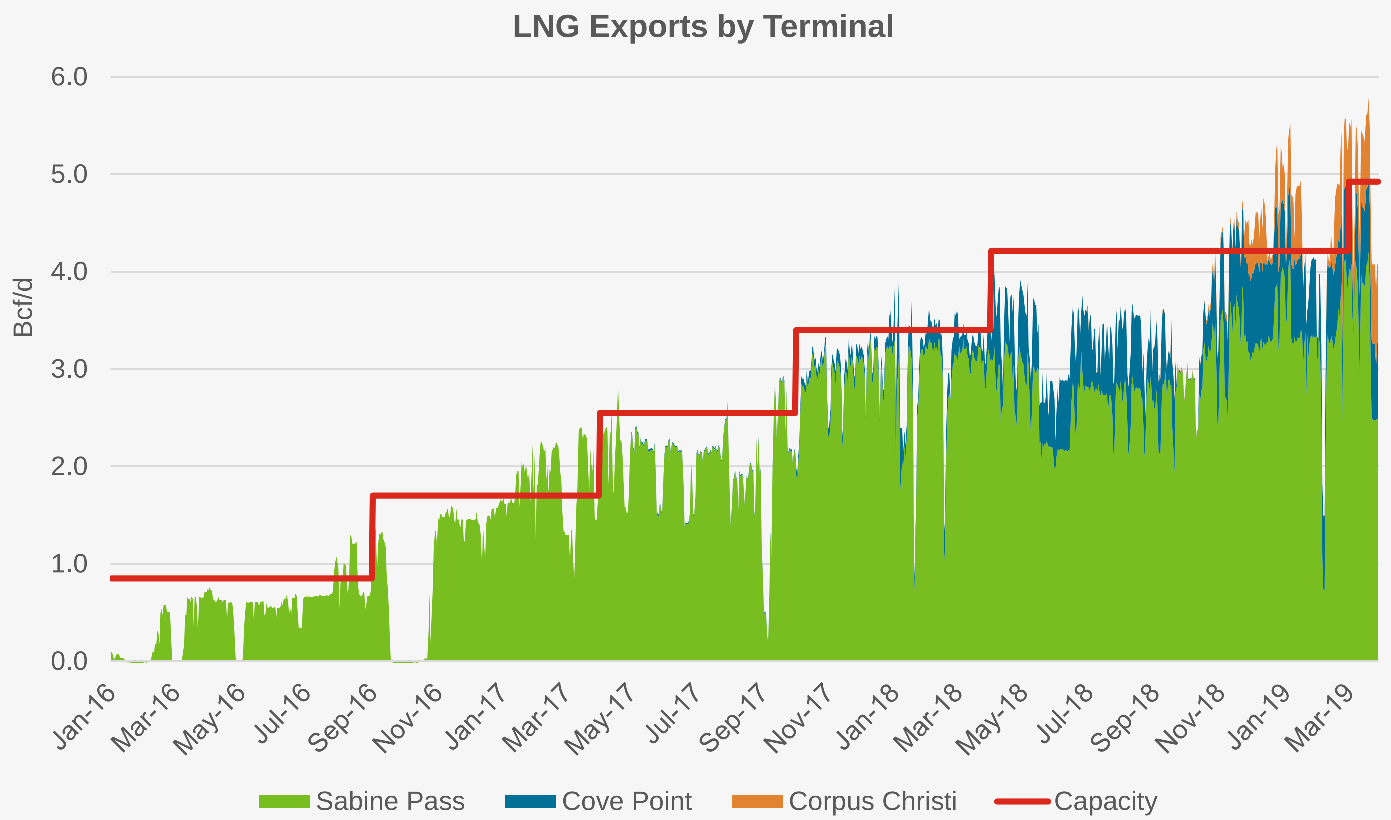
Source: DI OptiFlo, Bloomberg prices

LNG Exports – 3 Operating Terminals

Corpus Christi became the third LNG export terminal in the US on March 1, 2019. Commissioning volumes became evident in late 2018, and after service started, total LNG exports reached a record high of 5.78 Bcf/d on March 19.

CHART 27

Historical LNG Exports



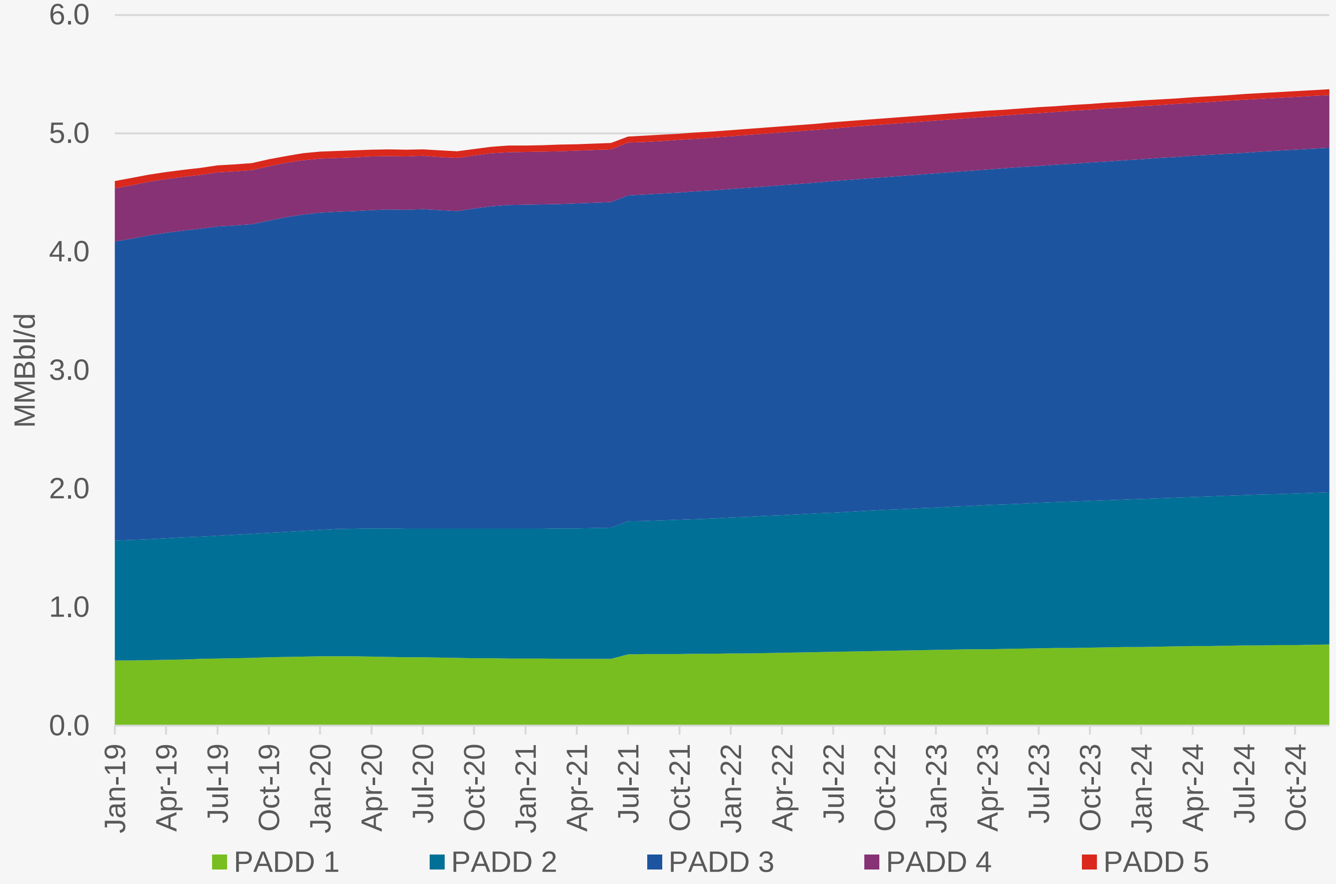
Source: Bloomberg

PADD Production

Continued growth in PADD 3 will drive the regional NGL growth. PADD 3 will account for ~384 MBbl/d of the 775 MBbl/d increase from 2019 to 2024.The Permian will be driving overall PADD 3 growth, gaining ~275 MBbl/d during the same period.

CHART 40

US NGL Production by PADD



Source: DI ProdCast, EIA

Prices

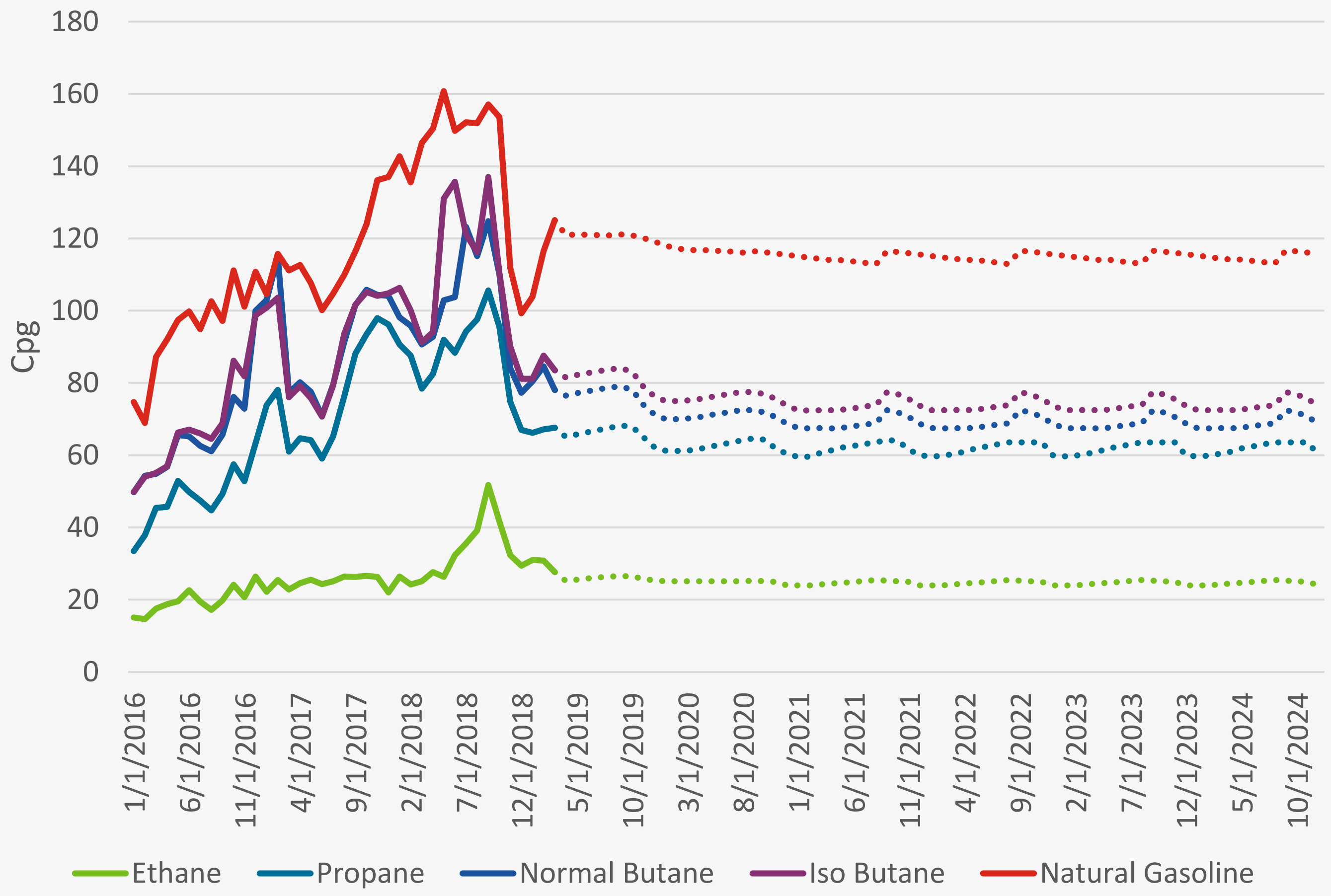
LPG prices took a dive in late 2019 along with crude prices. Crude has since rebounded back to ~$55/Bbl to $60/Bbl, but LPG prices have stayed relatively flat, with the exception of natural gasoline.

Ethane hit a peak in late summer 2018 because of increased cracker demand and not enough supply. Despite some small fractionation projects turning online to relieve that demand, ethane continues to be volatile because of tight fractionation and pipeline space.

Prices will likely stay volatile as infrastructure, fractionation, and cracker projects come to fruition.

CHART 41

NGL Price Forwards



Source: EIA, Bloomberg

E&P CAPEX

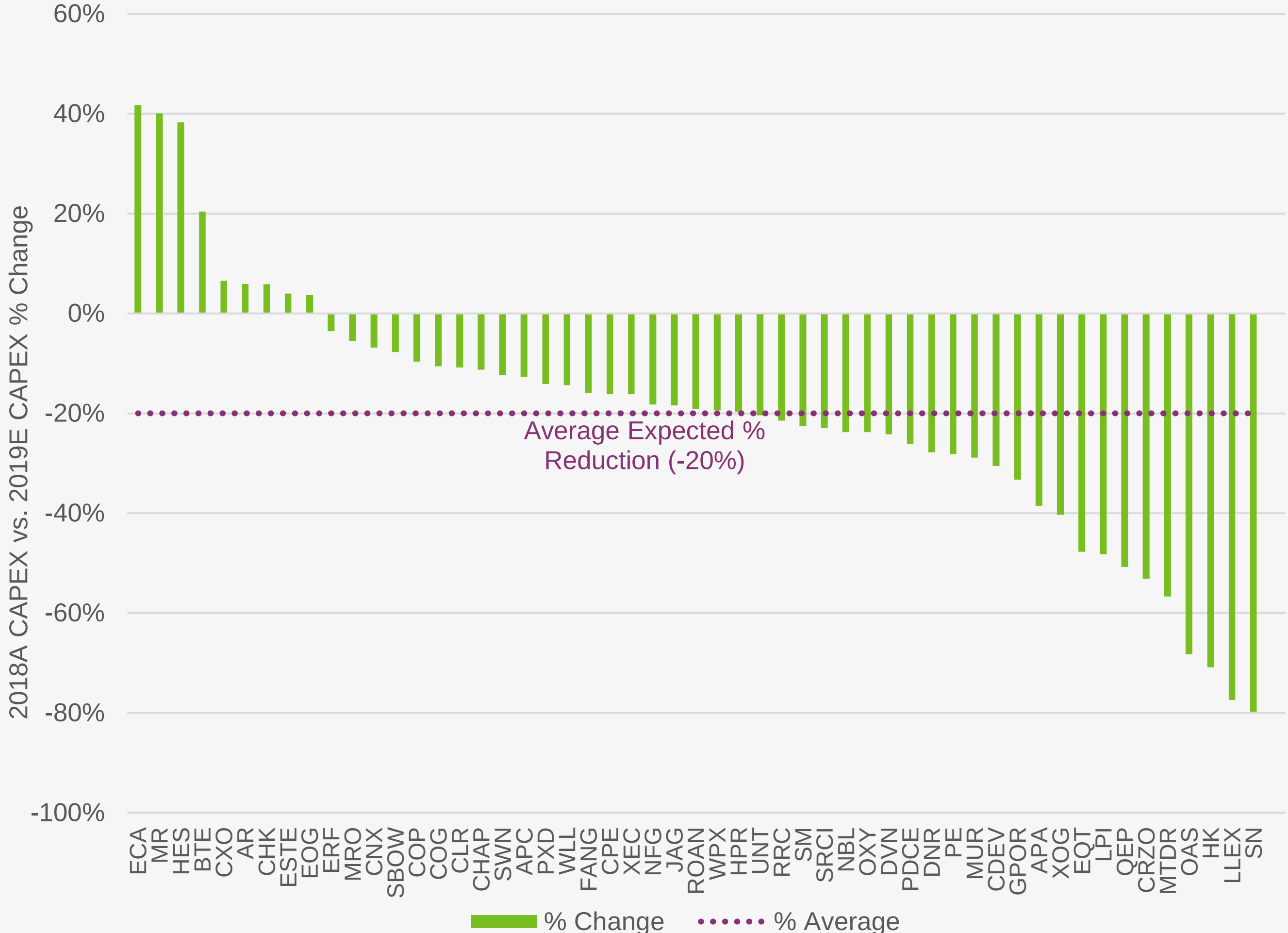
2019 will be the year of reduced CAPEX. Many operators announced that they will be lowering capital plans from 2018 levels – some with reductions over 60%.

Operators expect to reduce plans by an average of 20% from 2018 levels. Weighted by 2019 capital, these operators will reduce capital by 12%.

Most operators who are expected to increase CAPEX had an acquisition during the year, including companies like Baytex, Chesapeake, Concho, Encana, and Eclipse (now Montage).

CHART 45

2018 CAPEX and Expected Change YoY



Source: Company Filings, DI Research

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Thank you!

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