



U.S. OIL AND GAS MARKET: WHERE ARE THEY HEADED

Tipro 2017 Summer Conference

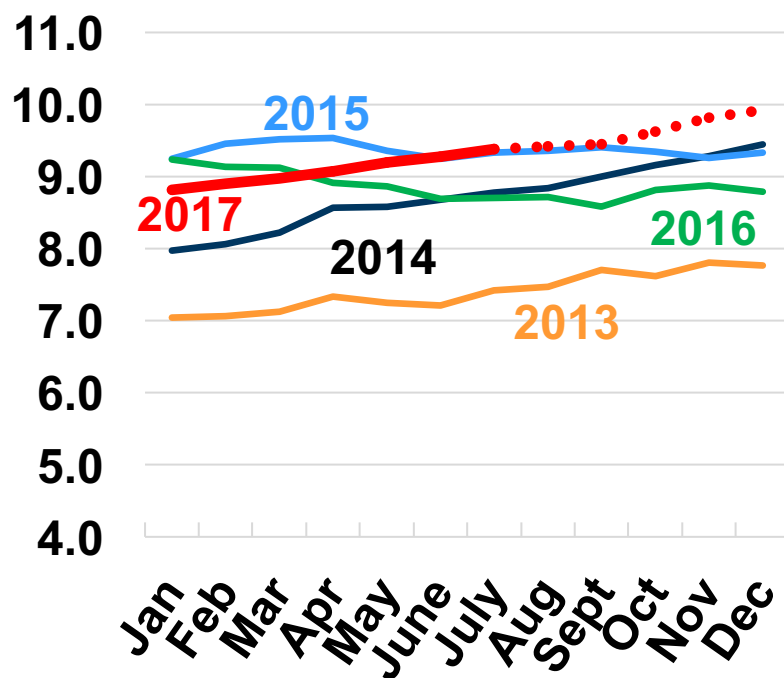
August 10, 2017

Outline and Key Points

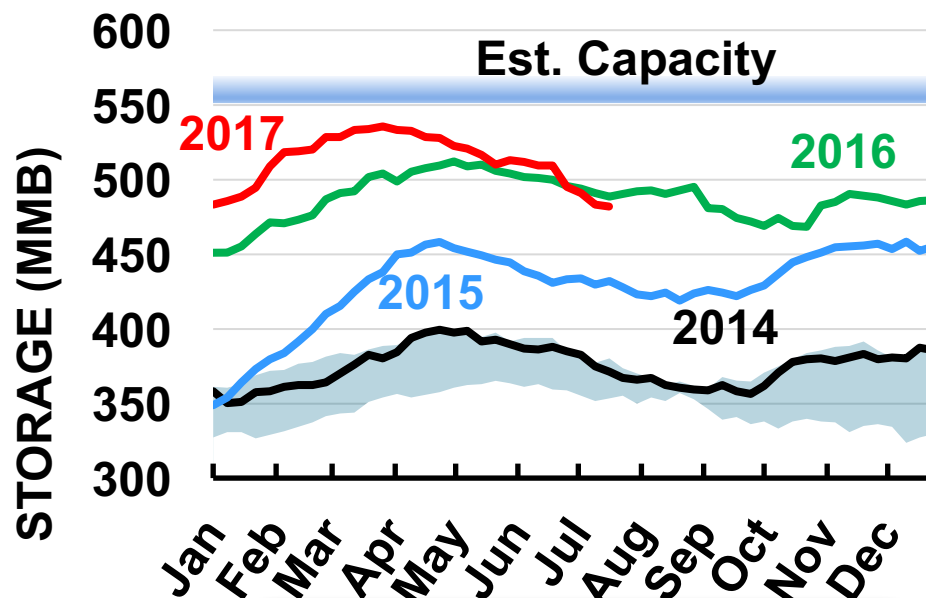
- **The oil market:**
 - *We are in an age of abundance – demand matters as much as supply.*
 - *U.S. shale is OPEC's nemesis.*
- **The natural gas market:**
 - *Natural gas is tied to oil at the drill bit. The price of oil impacts natural gas production and vice versa.*
 - *Currently the natural gas market is driven by oil prices.*
 - *Oil prices below \$50 will not produce sufficient associated n gas to clear the market, thus short term natural gas prices must rise.*
- **Drillinginfo's oil and gas price forecasts.**
 - *We expect oil prices to remain in the low \$50s and n gas prices to rise.*
- **Conclusions**

U.S. Crude Oil Production Is Rising; Inventory Build Is Slowing

U.S. Crude Oil Production (MMb/d)



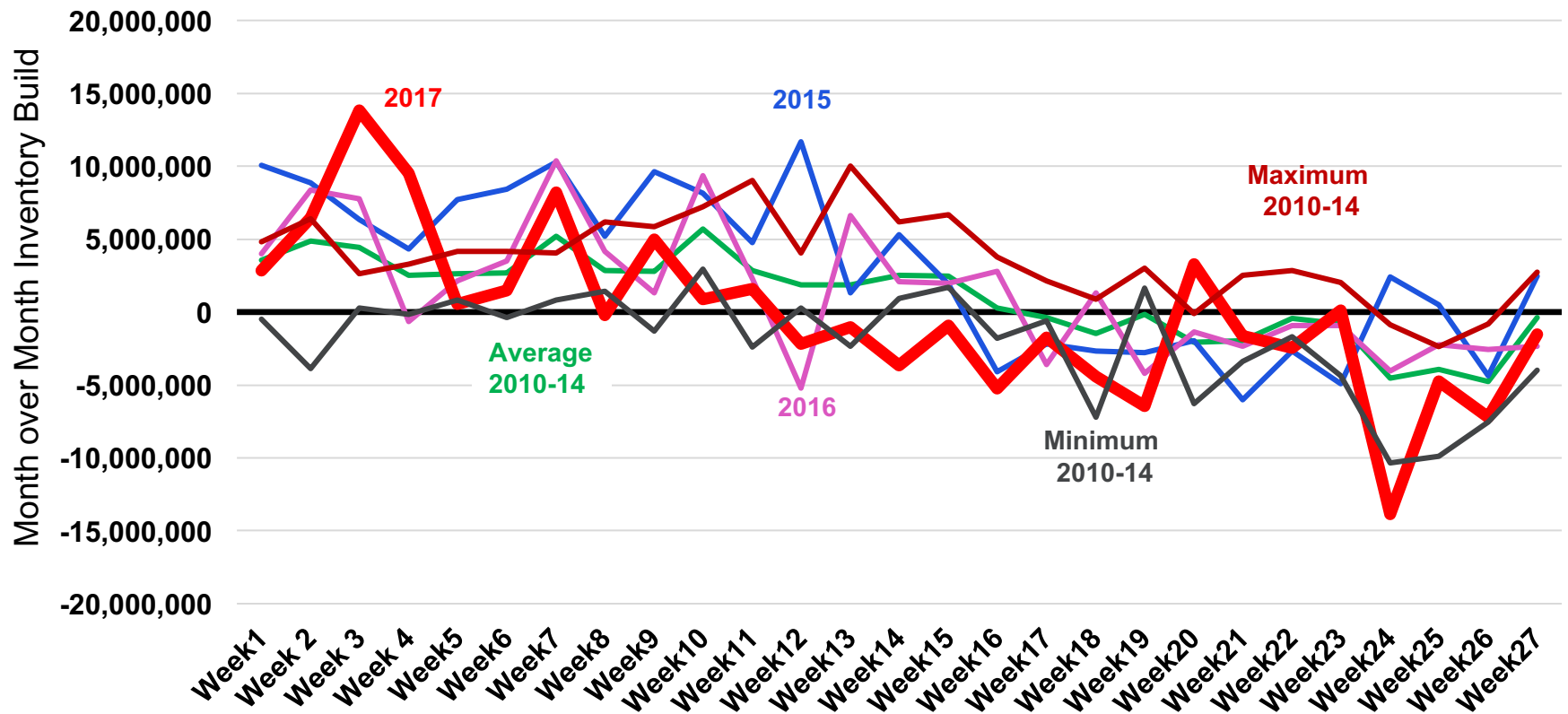
U.S. Crude Storage



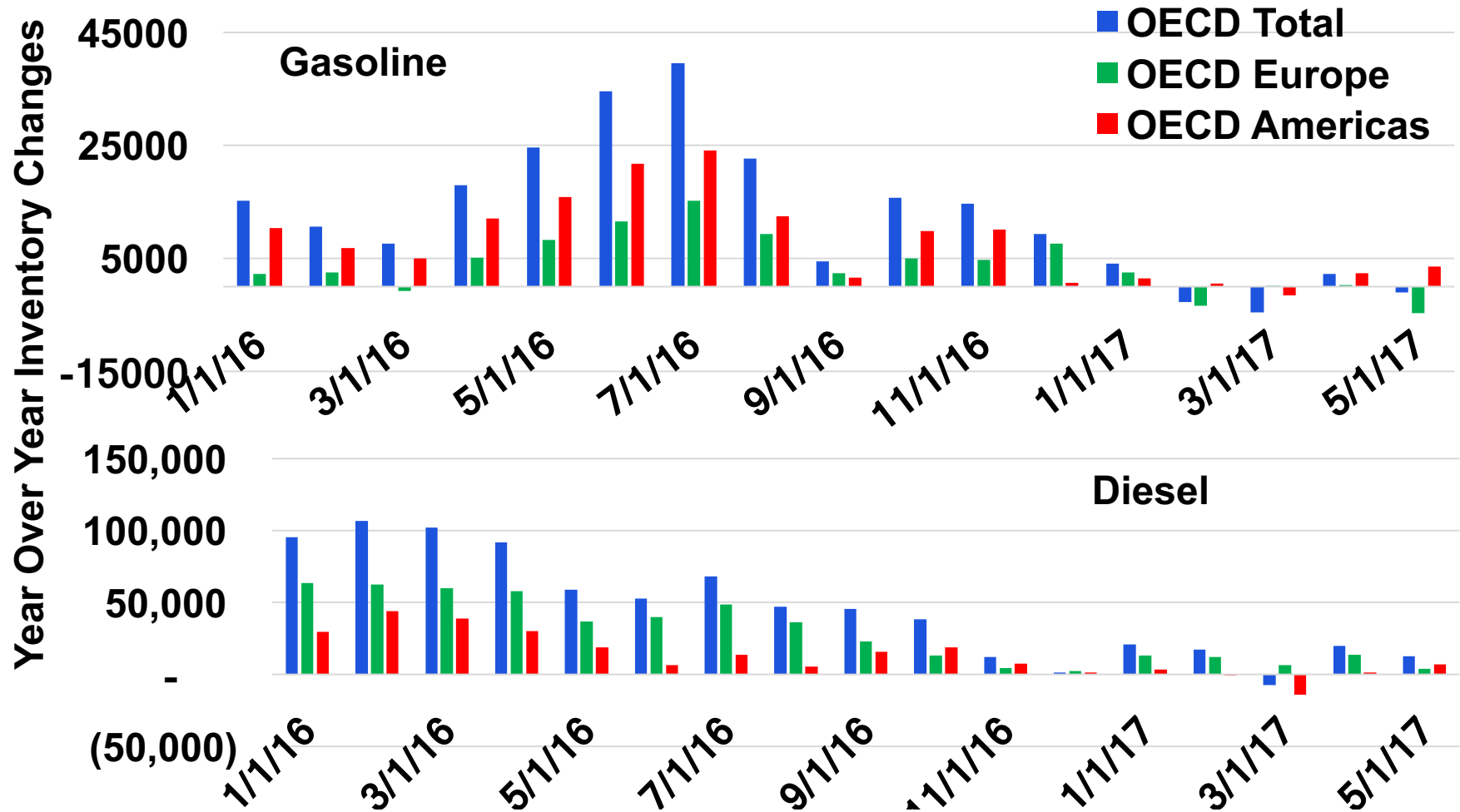
Key Assumptions

- ❖ Production: Ponderosa Producer Level
- ❖ Imports: 7.300 MMb/d
- ❖ Exports: 0.500 MMb/d
- ❖ Regular Refinery Runs: 16.2 MMb/d
- ❖ Maintenance Refinery Runs: 15.5 MMb/d

While Month Over Month Builds Have Declined Lately, Their Magnitude Is Within Historical Bounds

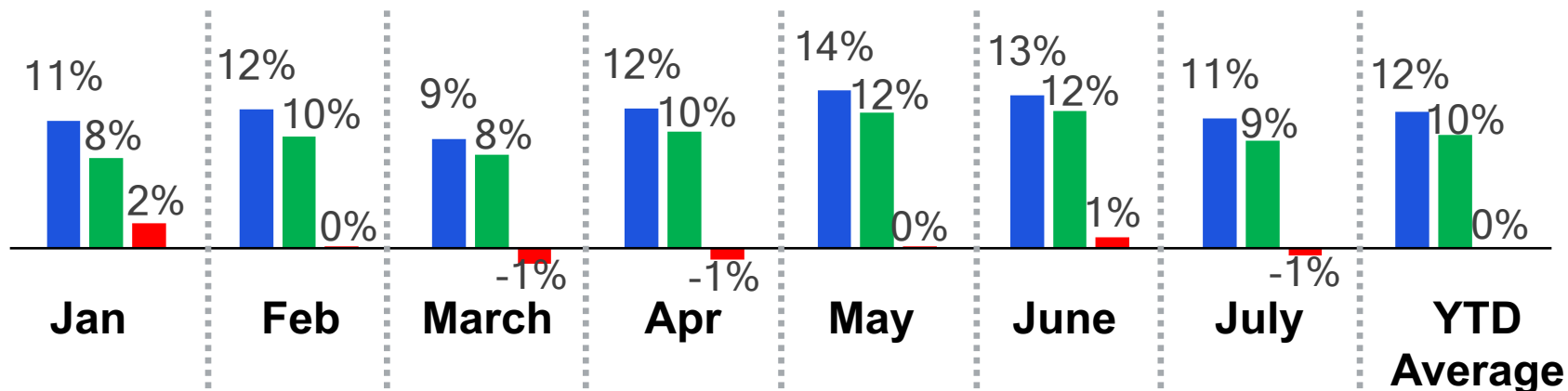


Refined Product Inventories Are Slowly Diminishing

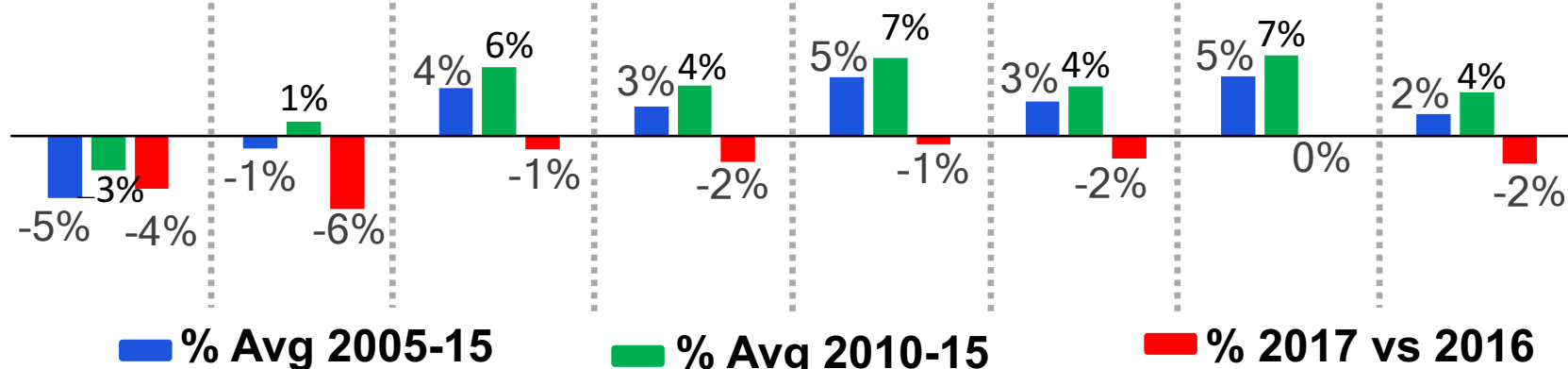


So Far In 2017, Gasoline Demand Is Down A Little, Stocks Flat

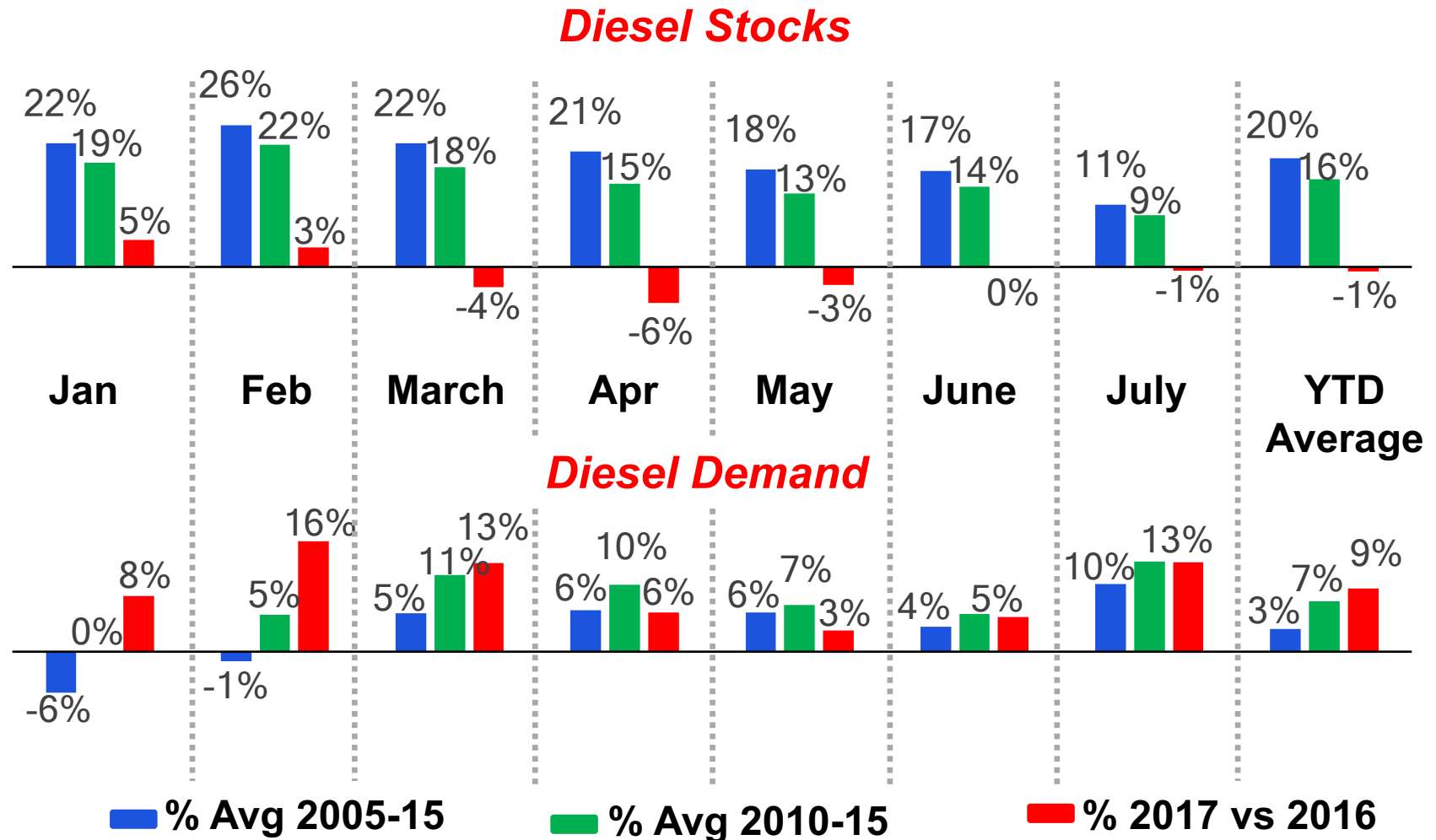
Gasoline Stocks



Gasoline Demand

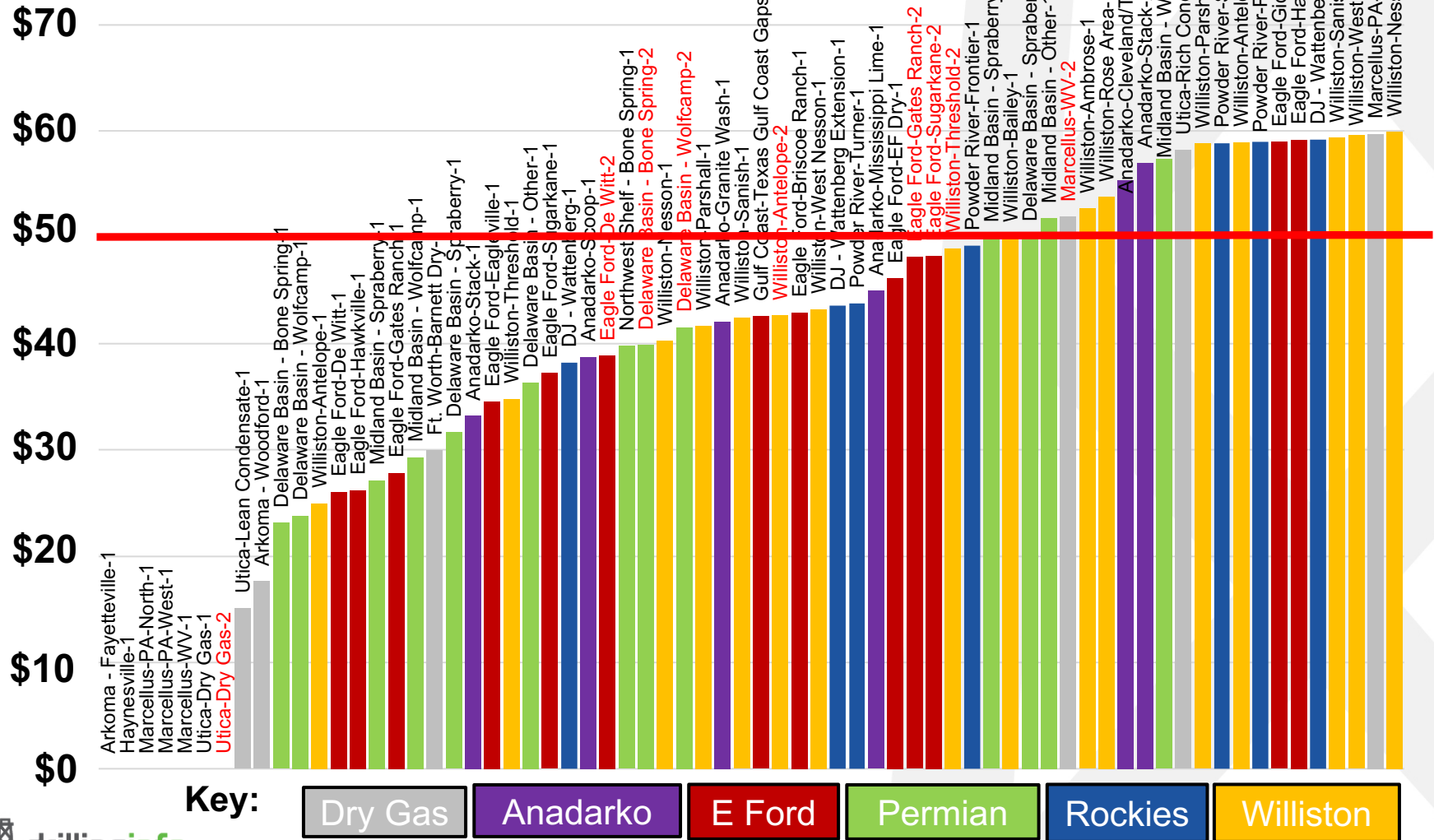


So Far In 2017, Diesel Demand Is Strong, But Stocks Are Flat



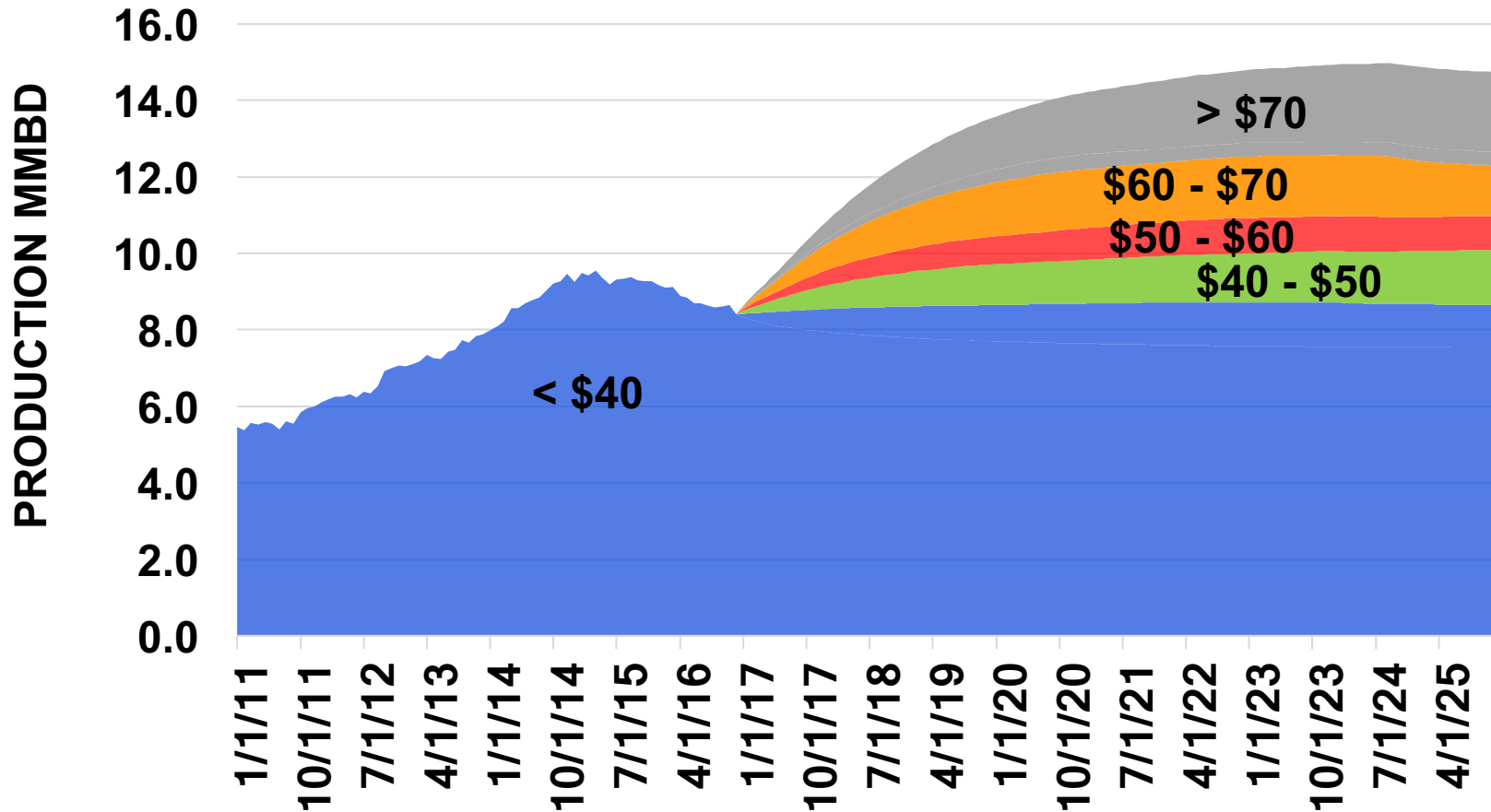
US SHALE: OPEC's Nemesis

WTI Breakeven Price @ 20% MARR & \$3.50 HH



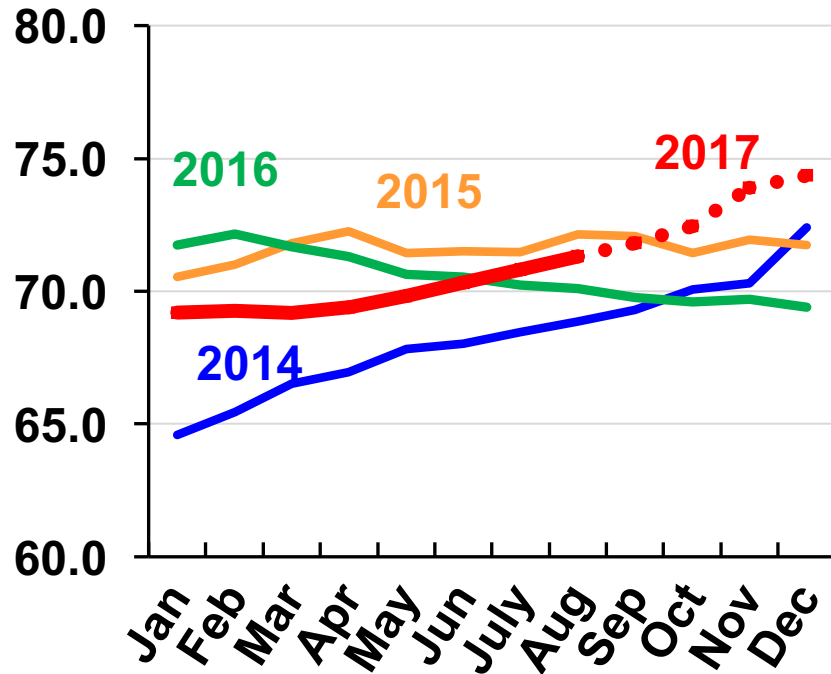
US Crude Production Increases When WTI Futures Holds Above \$45

(Assumes \$3.50 N. Gas)

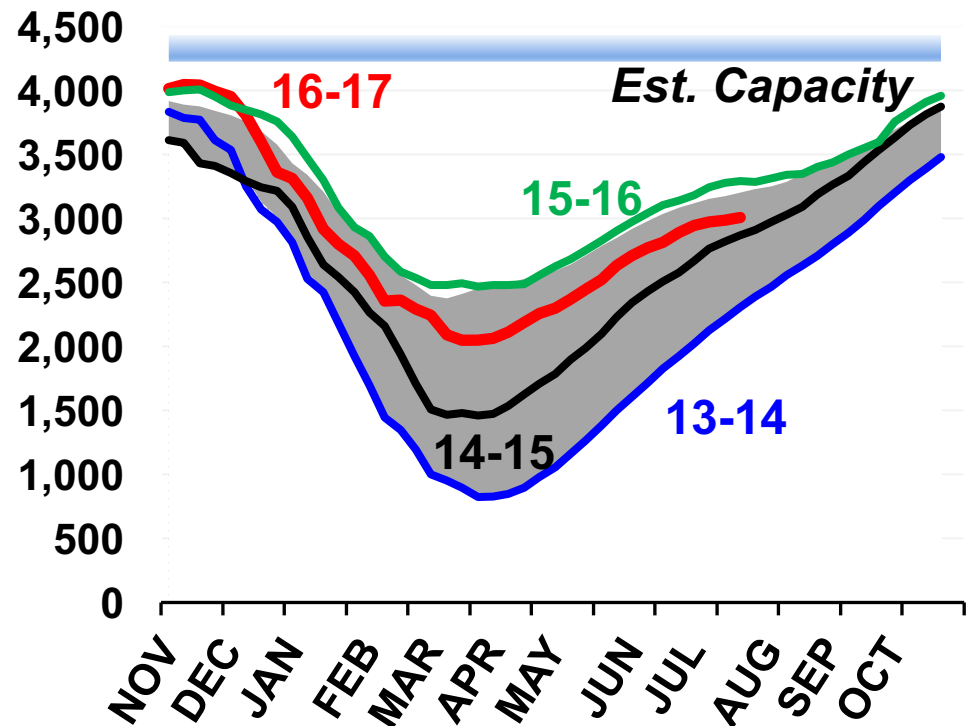


U.S. Natural Gas Production Is Still Relatively Low, Storage Is Rising

**Average Daily Dry Production
(Bcfd)**



**U.S. Storage Inventories
(Bcf)**

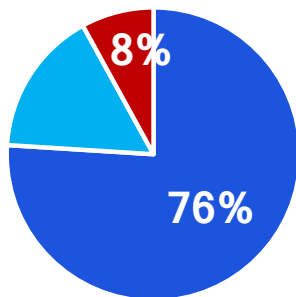


Wells Rarely Produce Only One Commodity

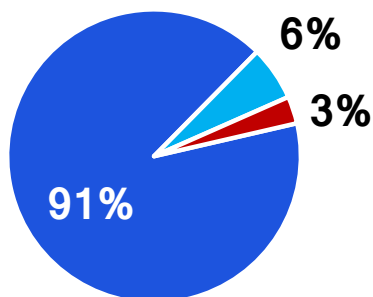
Distribution of Revenue From Average Well

Assumes \$50 WTI, \$3.50 HH

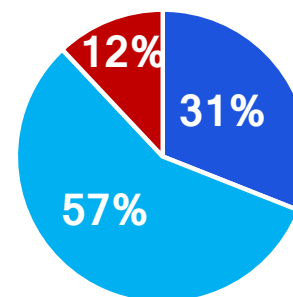
EF Dewitt



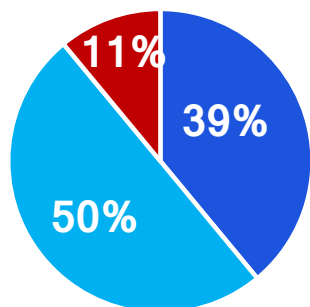
EF Eagleville



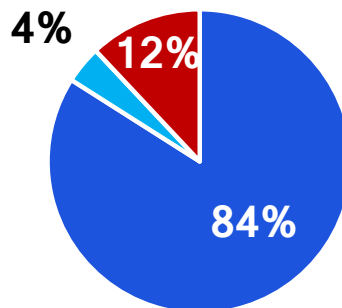
Anadarko Scoop



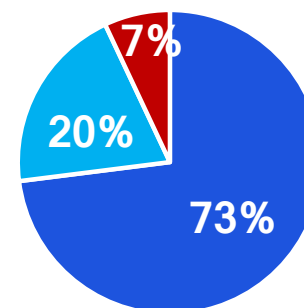
Granite Wash



Permian Sprayberry



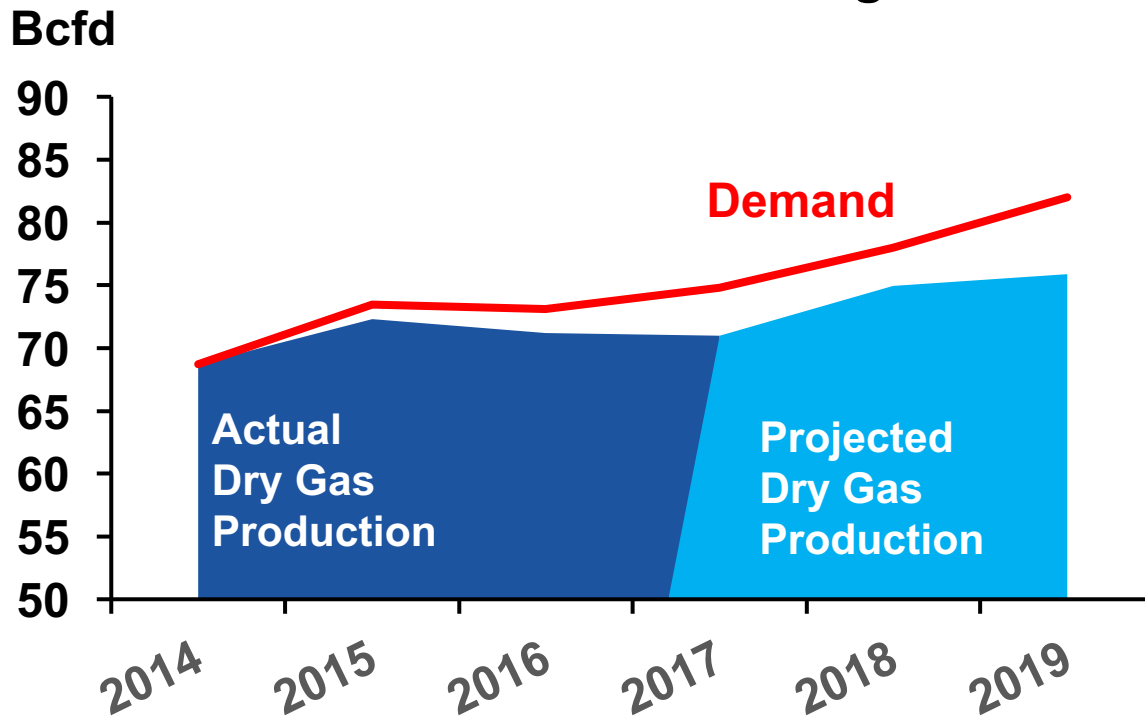
DJ Wattenberg



 Natural Gas  Oil  NGLs

Forward Curve Won't Clear The Market

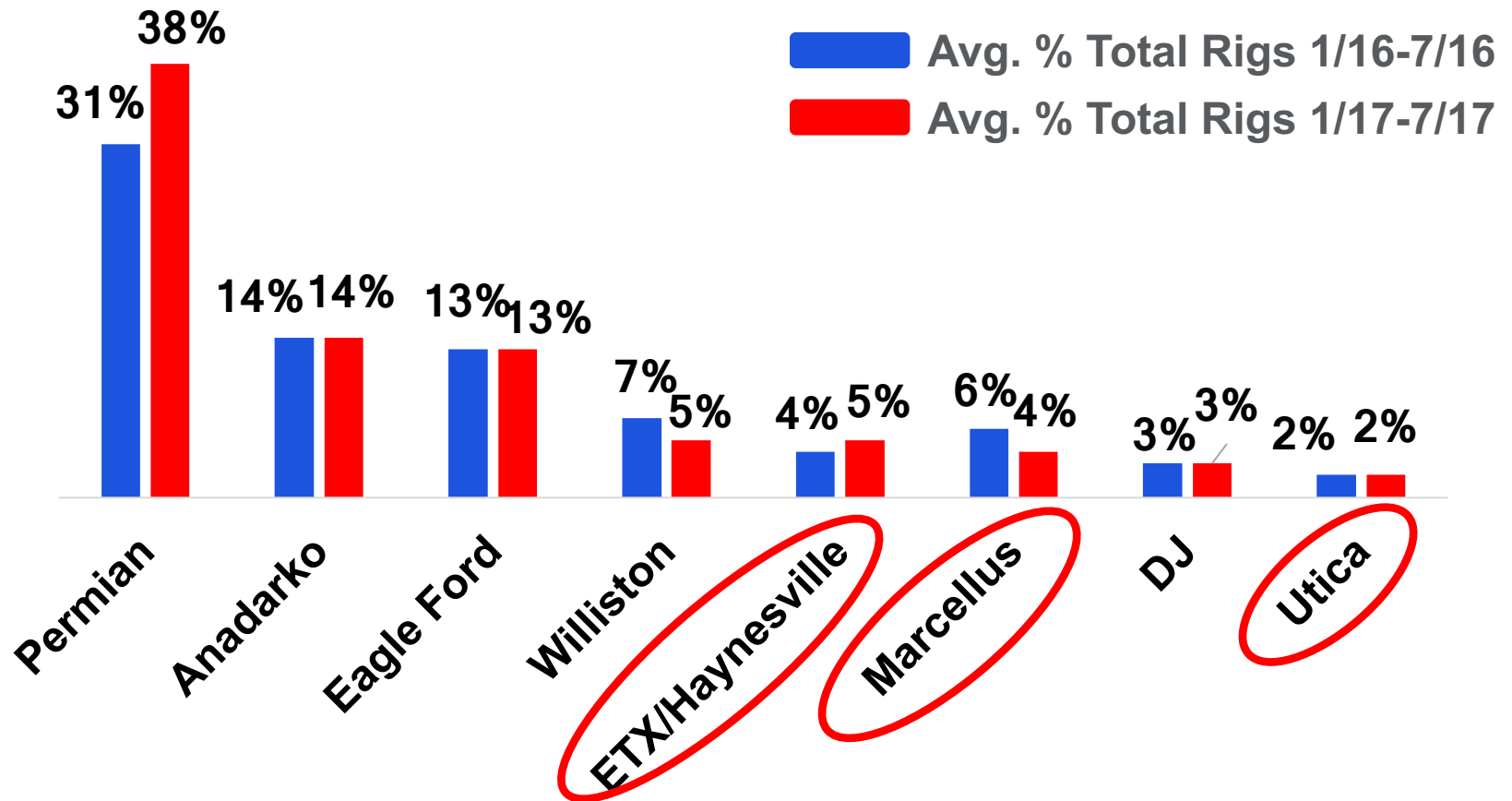
Production Vs Demand Assuming
Forward Curve Pricing



Forward Curve
Price Assumptions
(7/28/2017)

FC Prices	HH	WTI
Bal of 2017	\$3.05	\$49.25
2018	\$2.98	\$50.06
2019	\$2.81	\$50.20

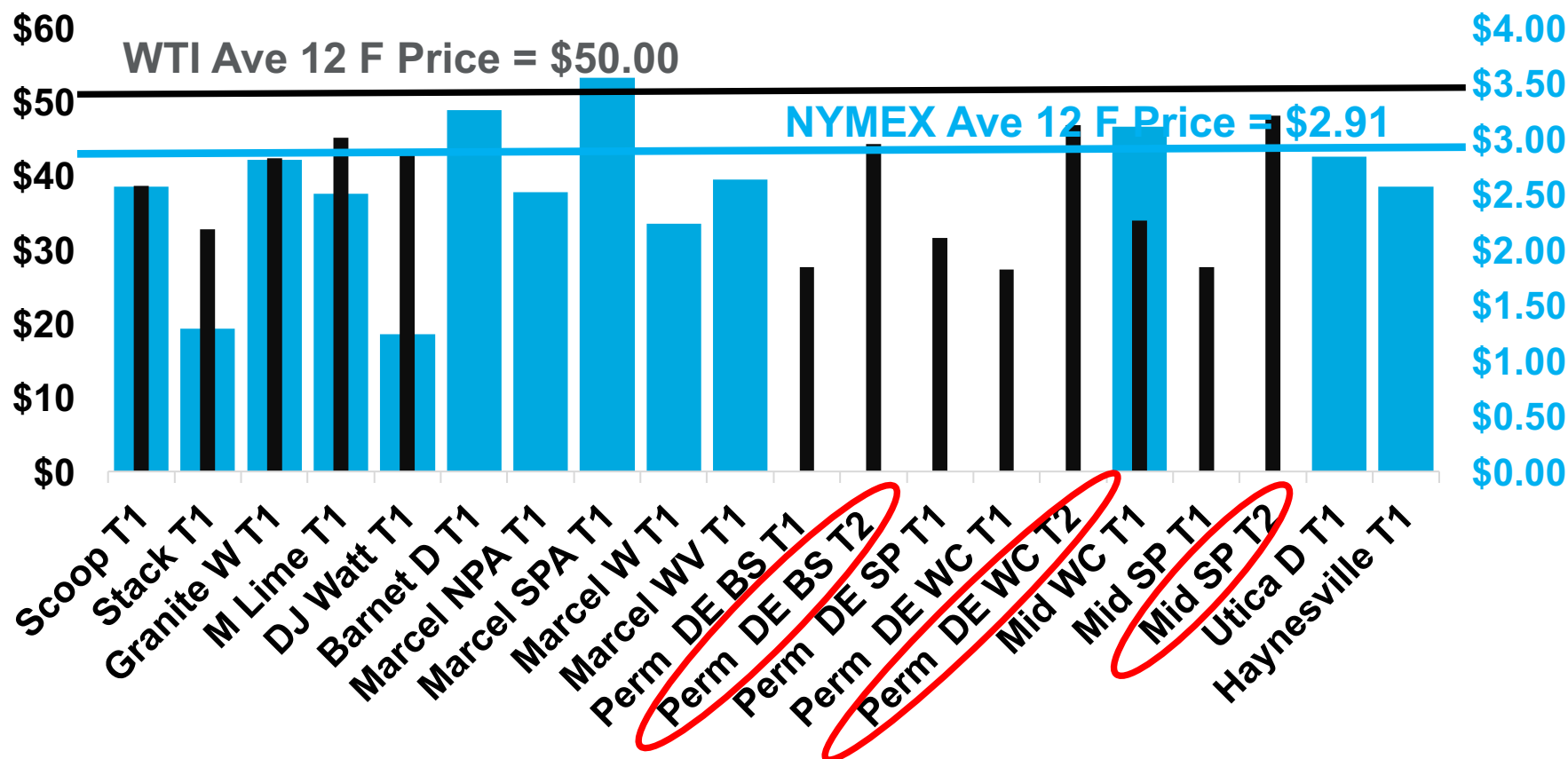
Drilling Is Still Focused On Oil Driven Basins



The Forward Curves Reward Producers For Investment Oil, Not Gas

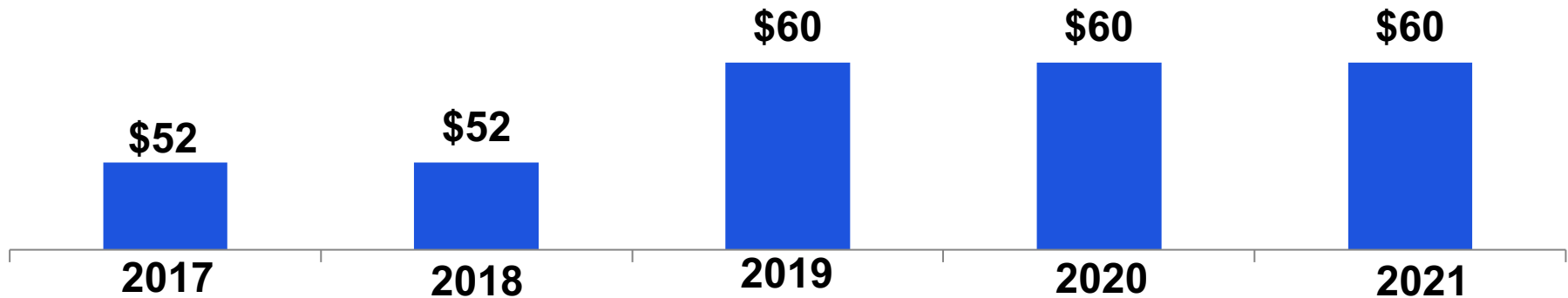
WTI
Breakeven

N. Gas
Breakeven

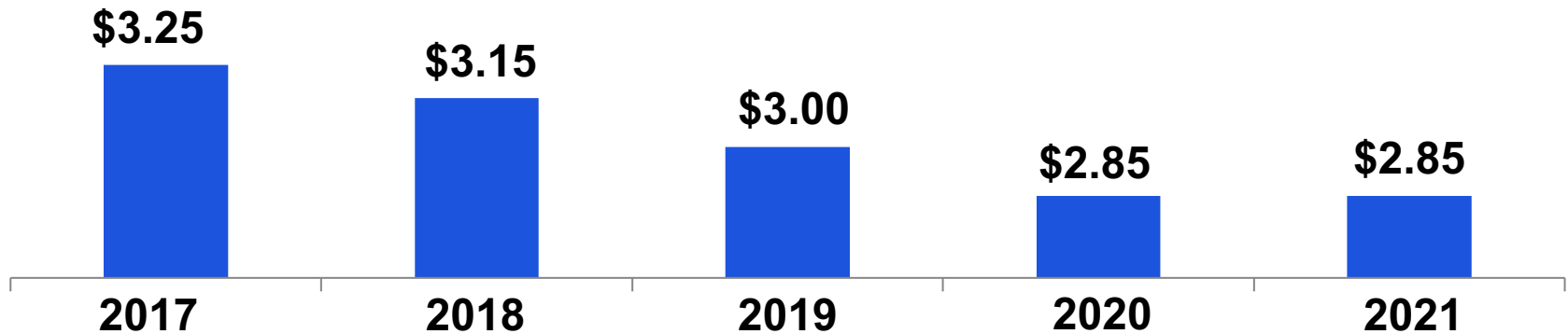


DI's Oil & Gas Price Forecast: Sustained Higher Oil More Volatile N. Gas

WTI Price Forecast



Natural Gas Price Forecast



Conclusions:

- **Abundance has brought a new game. Oil and gas markets reflect a surplus of supply; said another way, a shortage of demand. Sustained stronger demand is needed to rebalance the oil market.**
- **Inventory builds have slowed, it is not clear whether global demand is strong enough to significantly or sustainably reduce the overhang.**
- **N gas production is growing, but the growth rate is tied to oil production.**
- **Current oil prices are not sufficient to clear the near term U.S. natural gas market. Assuming normal weather, natural gas prices therefore must rise above their current levels. How high they rise will depend on weather, exports and coal vs n gas dynamics in the power market.**
- **Expect oil prices to remain in the \$45 to \$52 range through 2018 assuming current levels of global tranquility and economic prosperity.**
- **If normal winter weather returns, expect natural gas prices to rise, probably to at least the high \$3s and quite possibly north of \$4.00.**
- **The higher prices will be short-lived. Higher oil prices and/or higher natural gas prices will eventually drive greater associated gas production, which will swamp demand and driving prices lower.**

THANK YOU

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