

Natural Gas & Oil Market Update

April 2016



PONDEROSA ENERGY
Integrated Analytics

Key Takeaways

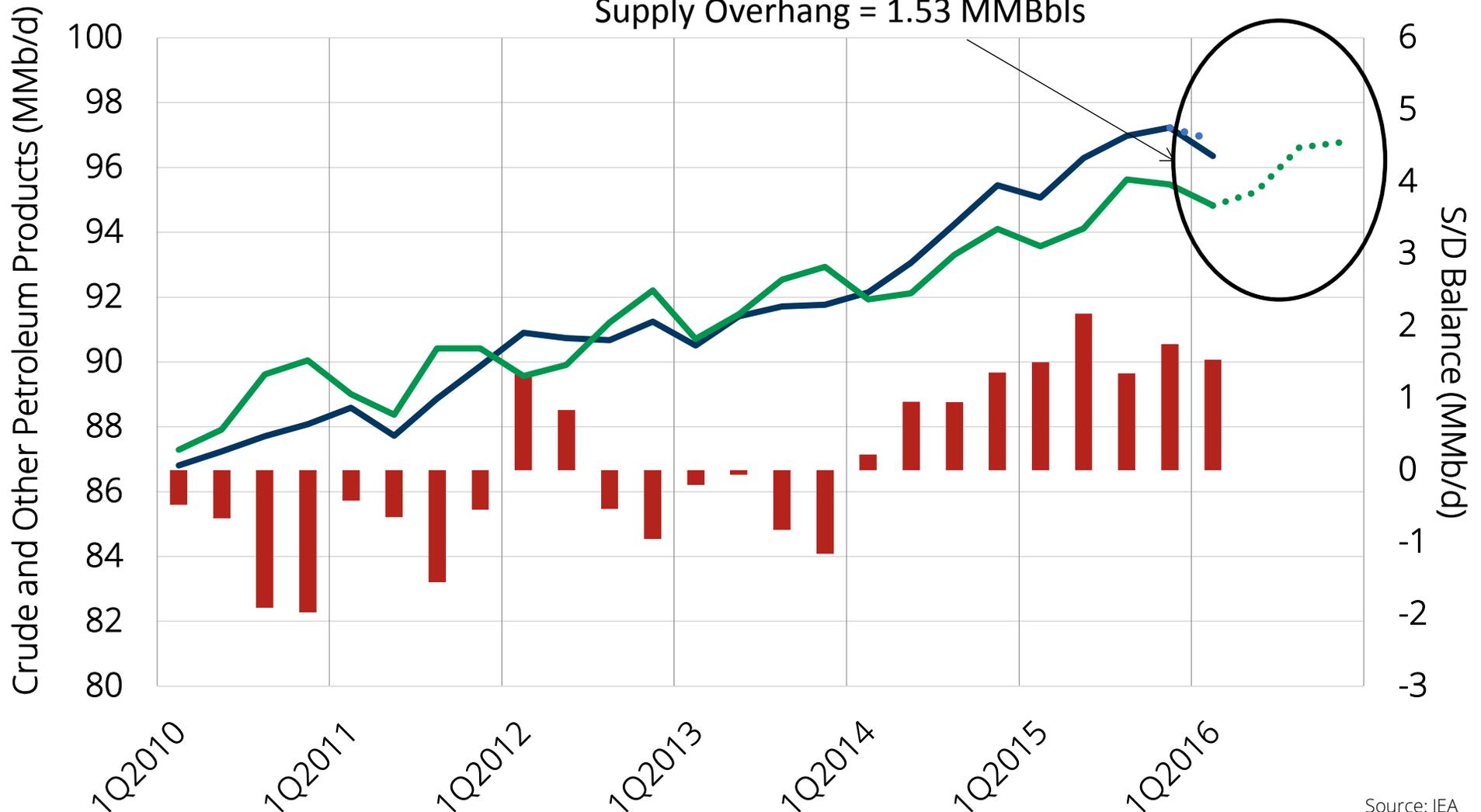
- Crude oil prices are still depressed due to resilient supply, and insufficient demand growth. Ponderosa is currently forecasting \$52 avg WTI in 2017 and \$60 in 2018. Structural events are still the biggest risk (example: Kuwait Strike)
- Access-to-capital issues are popping up more and we're watching spring re-redetermination closely. We will see additional bankruptcies and consolidation.
- Associated Natural Gas is being impacted by lower crude-directed drilling and low gas prices. We expect slightly declining production so long as crude prices remain below \$50 AND gas prices remain below \$2.50.
- Ponderosa expects short-term gas prices will remain low due to record storage levels and forecasts of a moderate winter in the Lower 48, but will rise later in 2016 to a Q4 average of \$2.86. The forecast calls for prices to trend higher and reach \$4.03 in 2020.
- Gas and Crude prices will recover; gas will likely hit \$4 again by 2020.

IEA Global Crude Balance – Market is Still Supply Long

IEA Supply/Demand - Crude and Other Petroleum Products (MMb/d)

■ S/D Balance — Supply — Demand ... Demand Forecast ... Supply Adjusted For Biofuels

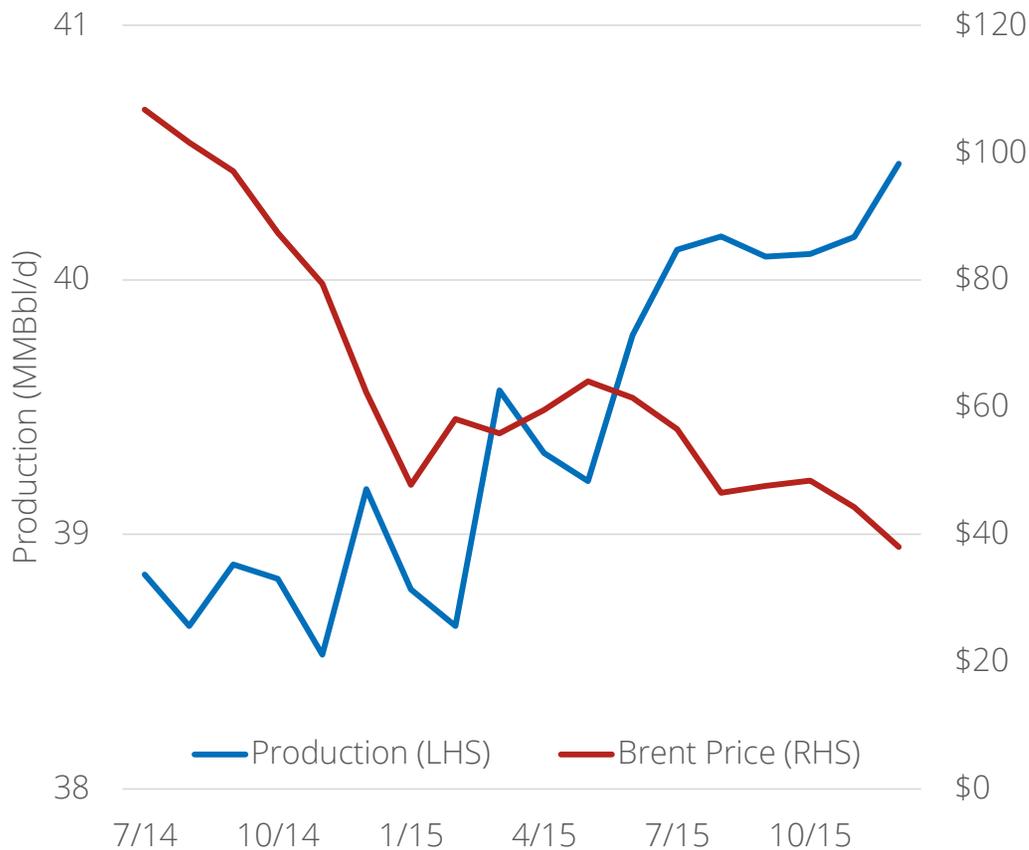
Supply Overhang = 1.53 MMBbls



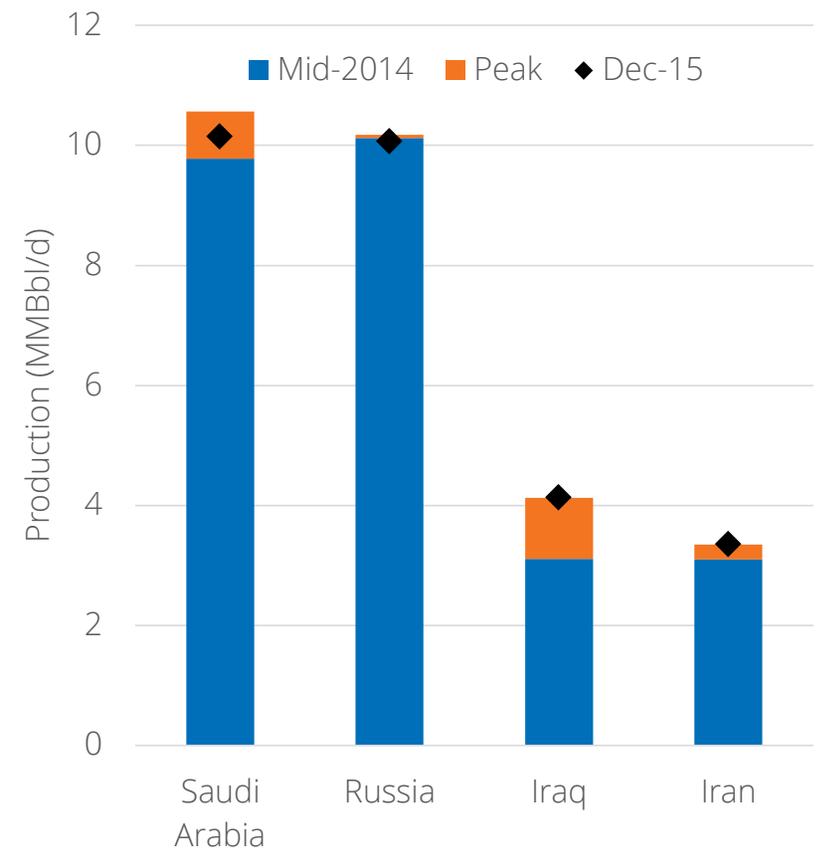
Source: IEA

Worldwide Production Is Resilient; Continue to Produce Through the Pain

Crude Production by Top 10 Countries (excl. US) & Brent Price



Production for the Big Movers

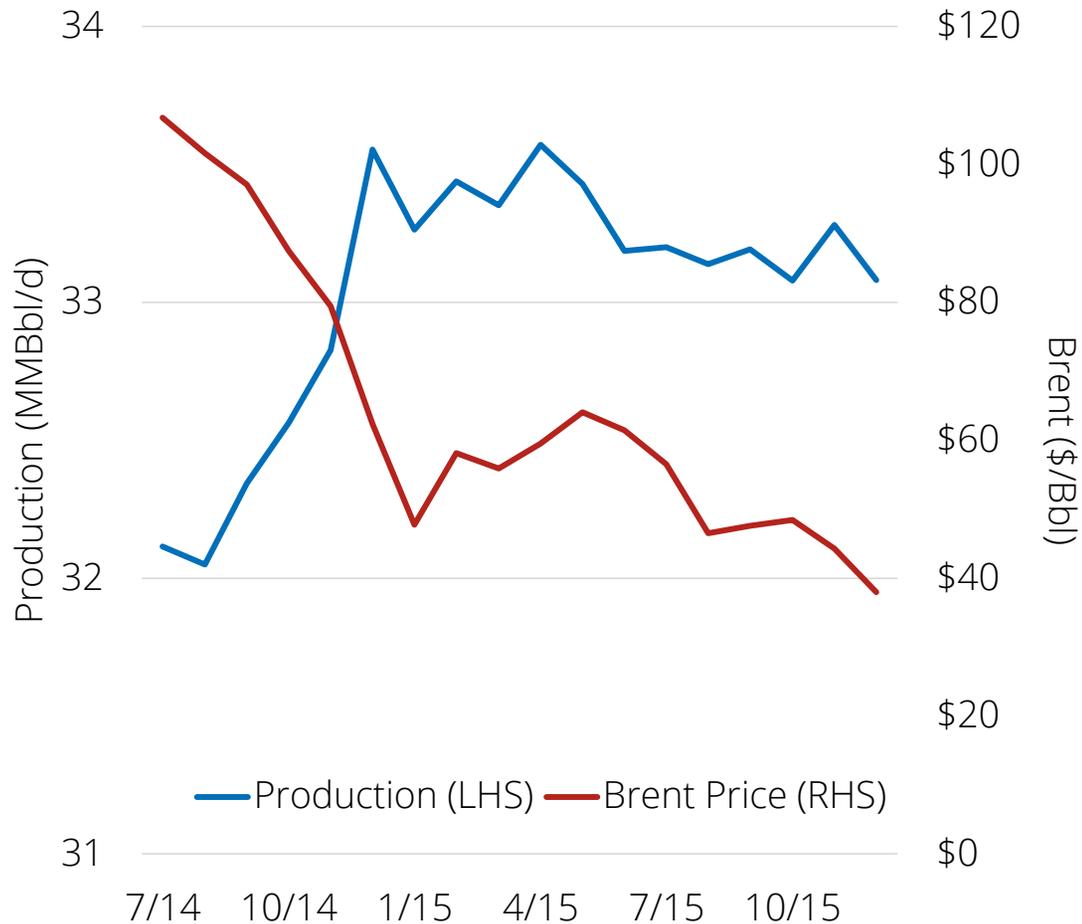


- Production by the world's top 10 producers (excl. US) has increased 1.6 MMBbl/d between mid-2014 and December 2015 (+4%). In the same period, prices decreased ~\$69/Bbl (-64%).
- Saudi Arabia and Iraq have posted the largest increases among the biggest producers, with Iraq growing more than 1 MMBbl/d. Iran has capacity to grow production after the sanctions are lifted and operations are restored.
- Until production declines offset these increases and inventory is worked off, any price moves upwards are unsustainable.

Source: JODI

The Non-Top 10 Global Crude Producers Have Started Declining Slightly

Crude Production For Non-Top-10 Countries & Brent Price

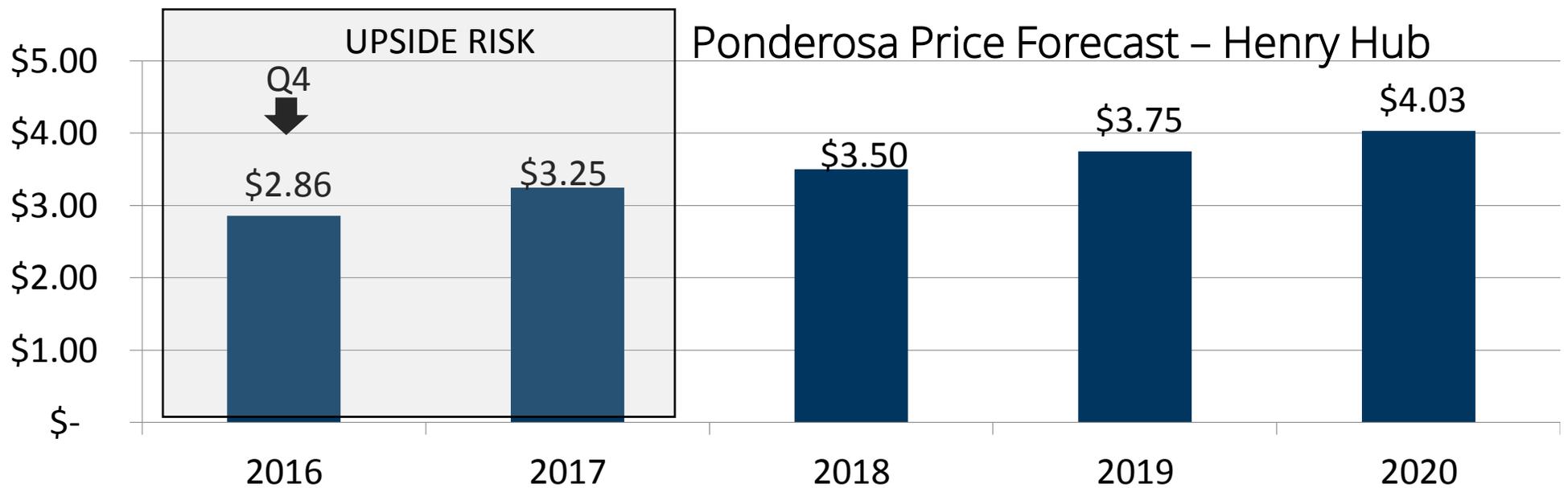
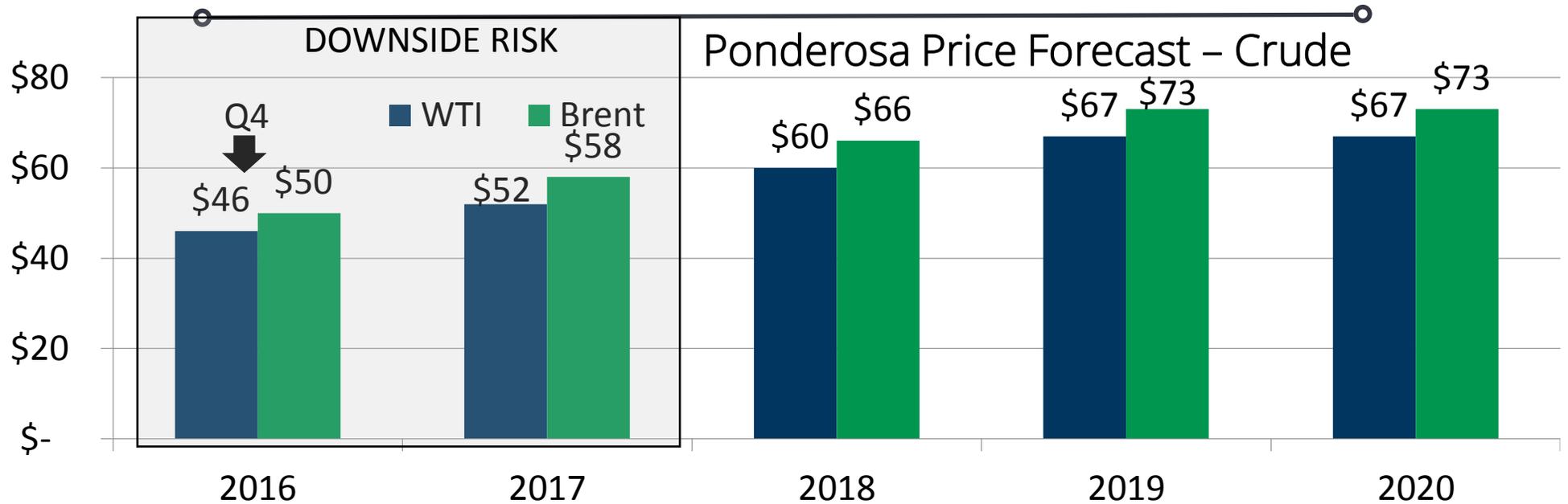


- Production by the world's non-top-10 producers has decreased 0.118 MMBbl/d between July 2015 and December 2015 (-0.4%)*. If this slight decline continues, and the top-10 producers remain flat or decline, the global crude supply has peaked and the Supply/Demand overhang is already tightening.
- The rate of decline is only slight, and further signals that long-term price recovery will not happen quickly.

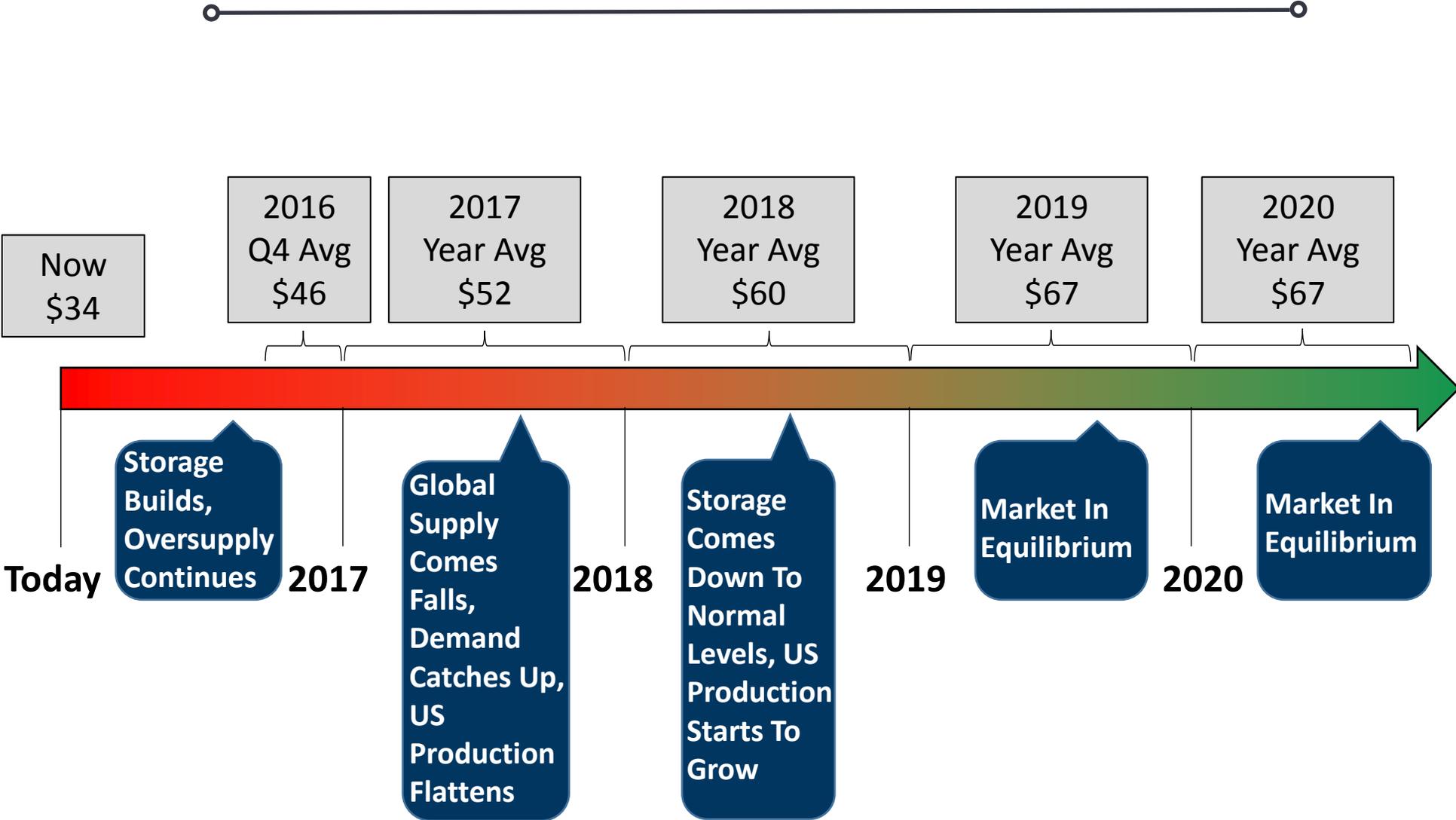
* Slight decline rate is calculated based on actual reported, and proxied data. The proxied data was held flat from the last available reported monthly number

Source: JODI

WTI Prices Won't Hit \$60 Annual Avg. Until 2018



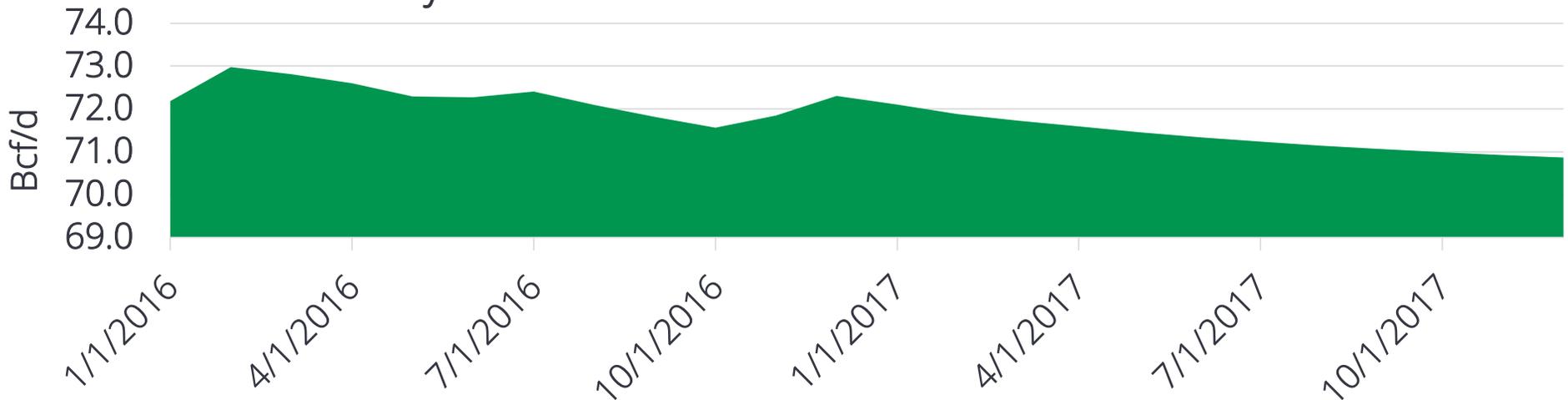
Ponderosa Oil Price Recovery Timeline



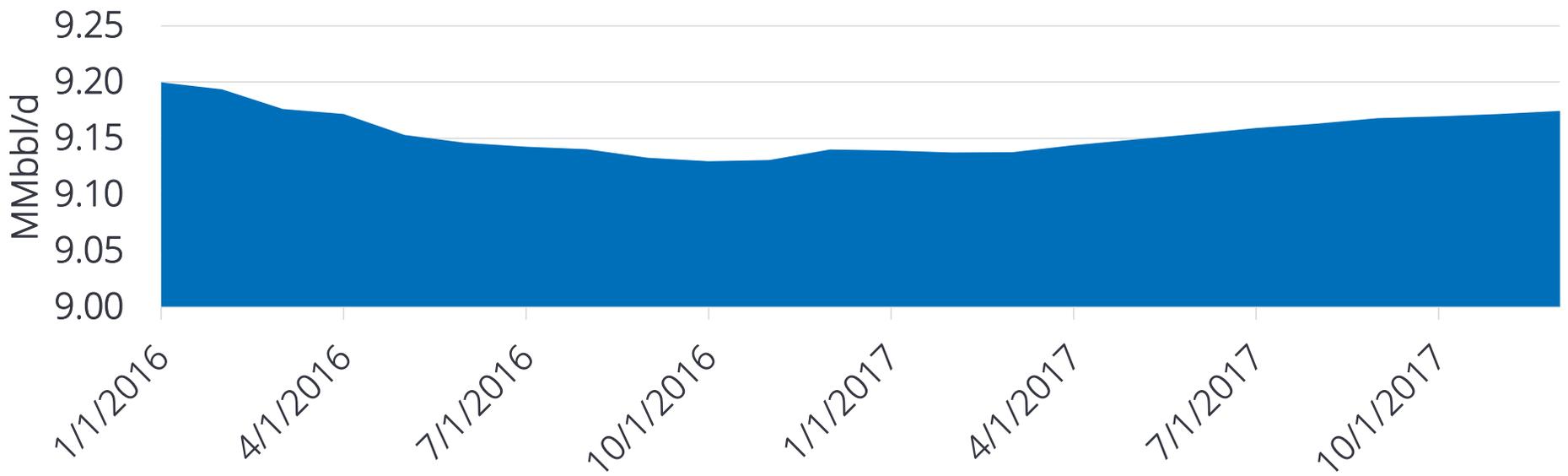
Short-Term Production Outlook (Guidance Based)



US Dry Natural Gas Production



US Crude Oil Production



Producer 2016 Guidance Summary Table

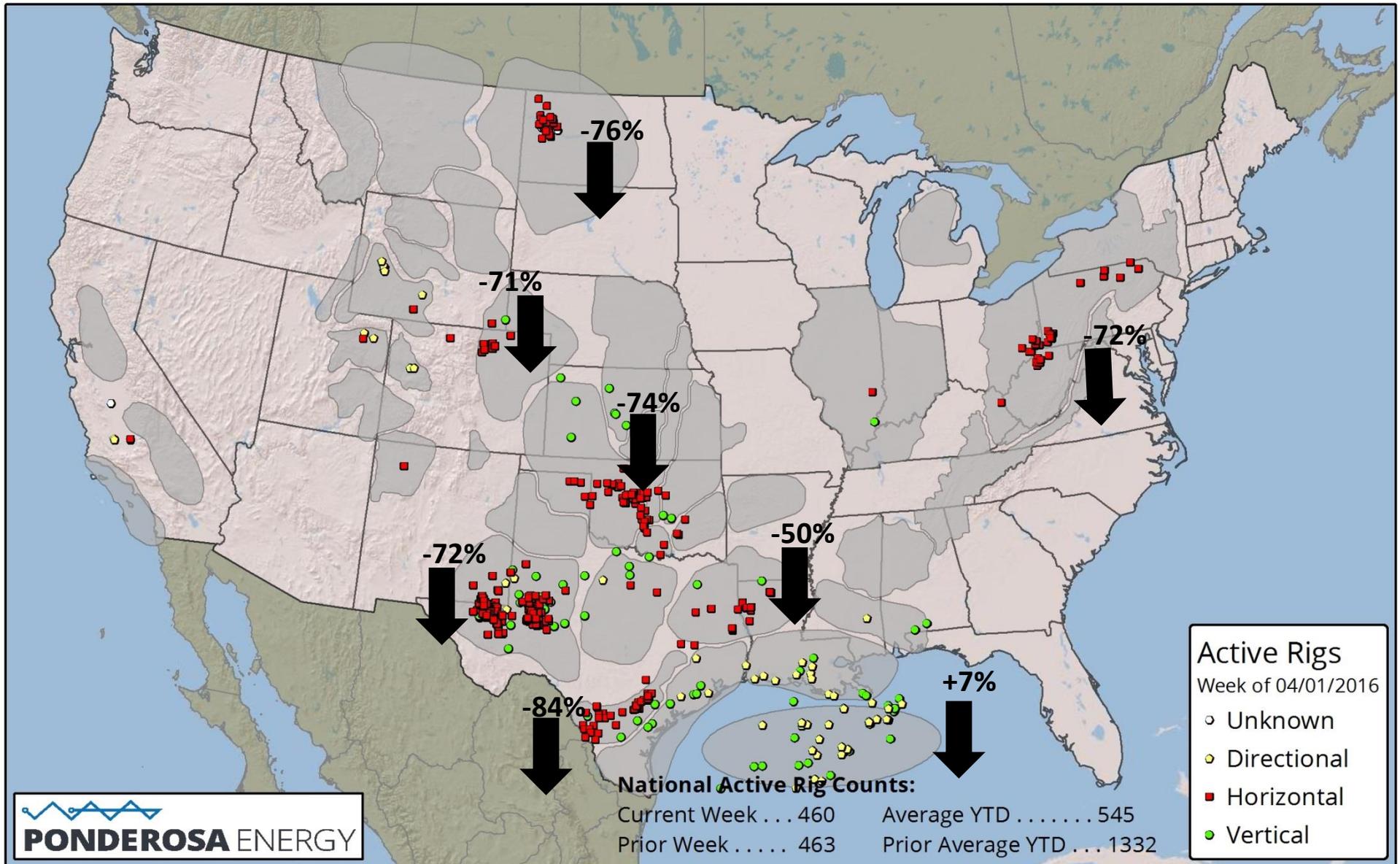
Company	Production (4Q yoy growth %)	Expected 2016 growth (%)	Operating cost (4Q% decrease yoy)	DCC (% decrease yoy)
Synergy	27%	26%		3%
Hess	2%	-8%	6%	29%
Murphy Oil	-8%	-12%	17%	31%
Chevron	2%	2%	9%	
Consol	39%	15%	23%	50%
Anadarko	4%	-3%		41%
Exxon Mobil	5%			
BP	6%	0%		
EQT	13%	18%	16%	
Shell	-5%		44%	
ConocoPhillips	3%	0%	25%	
Occidental	14%		14%	33%
National Fuel	-21%		-3%	
Statoil ASA	-3%	1%	4%	
Cenovus	-2%	-12%	22%	26%
Energen	17%	0%	8%	
Pioneer	12%	5%	19%	30%
Diamondback	46%	6%		30%
Cimarex	4%	-8%	21%	
Laredo	2%	-5%	19%	12%
Devon	7%	-6%	20%	23%
Noble	8%	10%	36%	
Marathon	-7%	-7%	28%	28%
Ultra	5%	-6%	-1%	28%
Gulfport	69%	30%	35%	20%
Cabot	0%	5%	7%	45%
EP Energy	10%	-14%	25%	31%
Enerplus	3%	-14%	10%	30%
PDC Energy	85%	35%	34%	9%

Company	Production (4Q yoy growth %)	Expected 2016 growth (%)	Operating cost (4Q% decrease yoy)	DCC (% decrease yoy)
Carrizo	7%	0%	27%	
Stone	-43%	-19%	-6%	
BHP Billiton	5%			
SM Energy	-8%	-17%	14%	40%
Encana	-2%	-14%		26%
Chesapeake	1%	-3%	13%	
Continental	16%	-10%	27%	25%
Rice	57%	31%	11%	7%
Antero		15%	10%	12%
Whiting	18%	19%	25%	
QEP Resources	-2%	-4%		
Apache	-19%	-9%	10%	35%
Concho	14%	-3%		
Newfield		-3%	23%	
Oasis	11%	-6%	2%	30%
WPX	1%	-54%	11%	
Unit	2%	-15%	46%	61%
Sanchez Energy	32%	-5%	12%	53%
Range	12%	9%	15%	17%
Halcón	-11%	-3%	16%	38%
EOG Resources	-7%	-8%	25%	23%
Southwestern	24%	-15%	16%	
Atlas	-14%		7%	40%
Bonanza	10%		31%	40%
Bill Barrett	20%	-9%	45%	42%
Eclipse	100%	-4%		32%
Swift	-6%		22%	25%
Jones	1%	-35%	-4%	

*blank entries indicate data unavailability

Source: Ponderosa Energy, Producer Earnings Calls

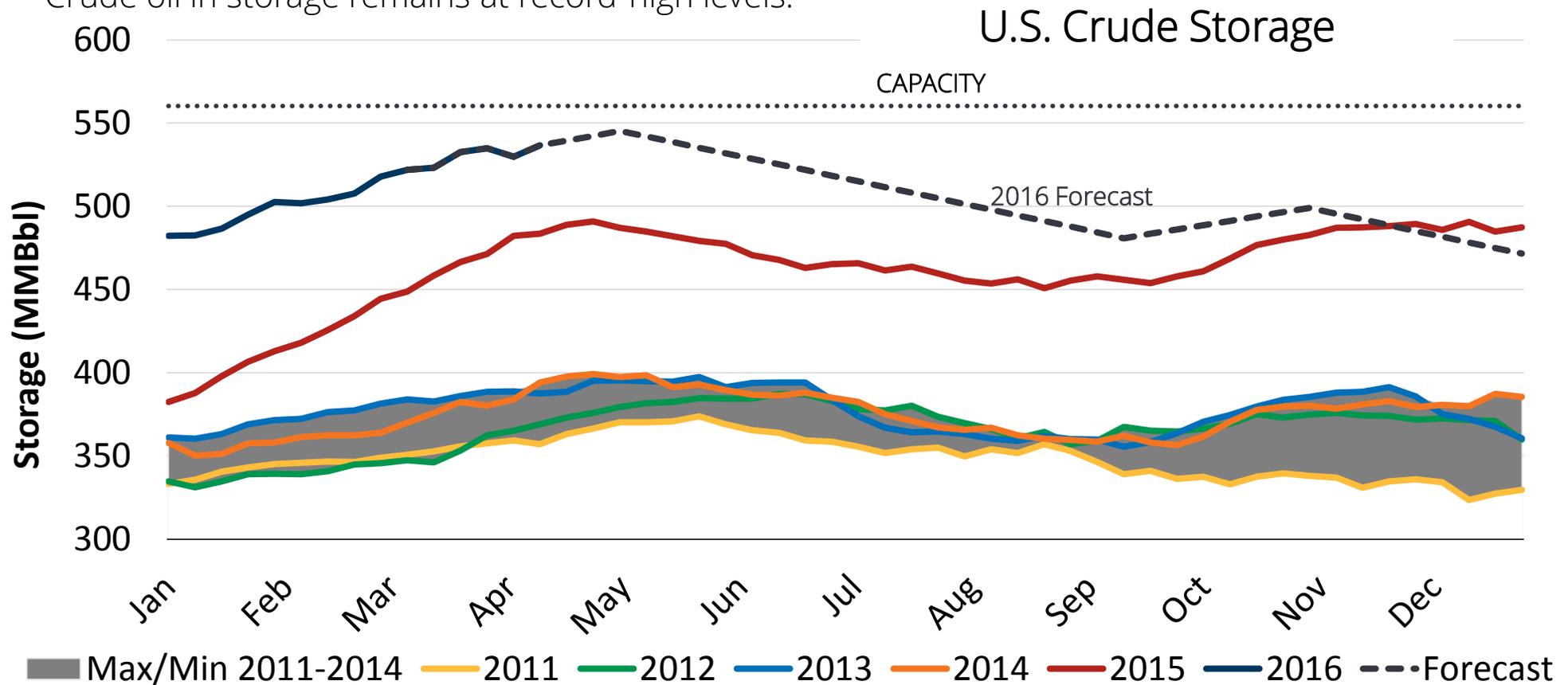
U.S. Active Rig Count Off 75% vs. Recent Peak in October 2014...but Offshore Activity is Up



Source: RigData

U.S. Crude Oil Production Growth Slowing; Storage Will Remain High

- U.S. crude oil production has proven resilient despite continued low prices. Crude oil in storage remains at record-high levels.



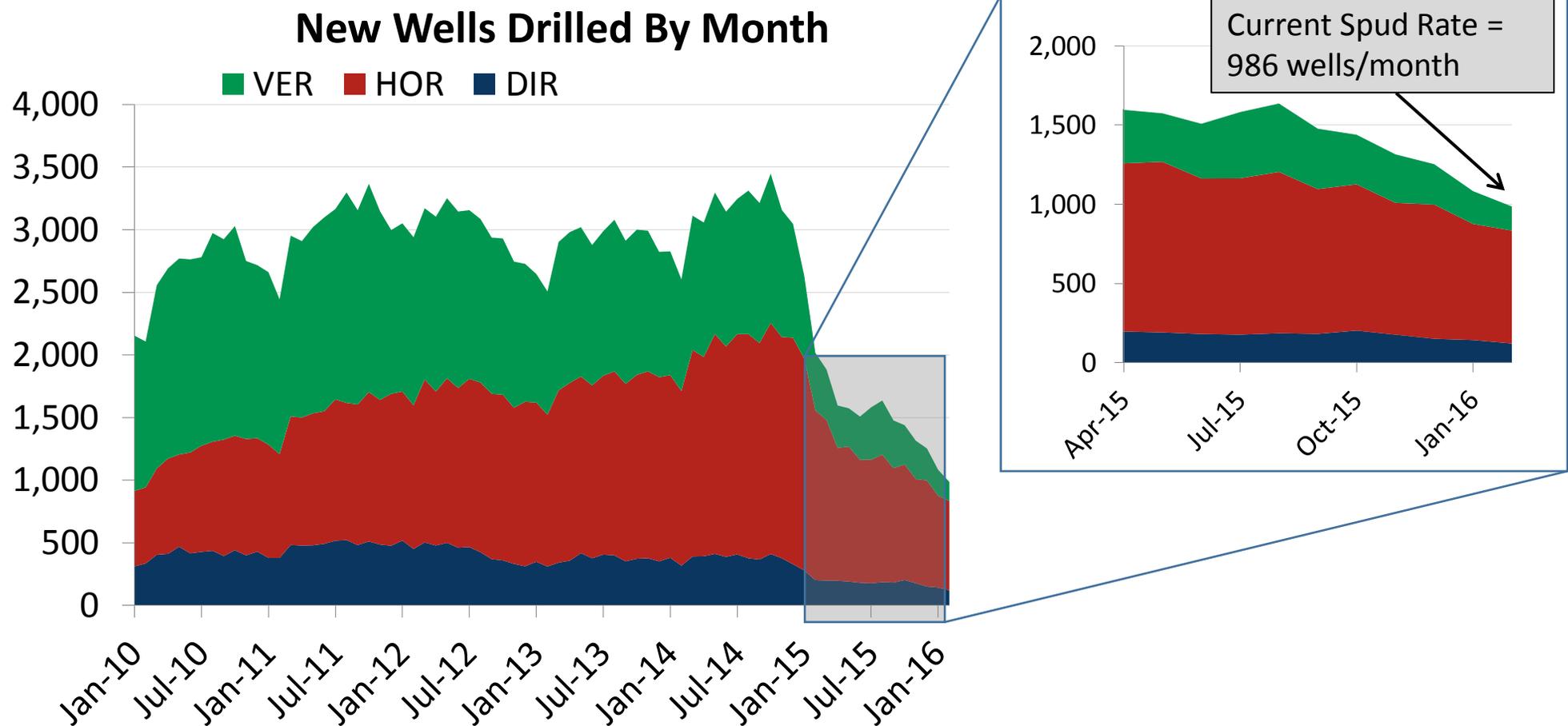
Key Assumptions

- 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

Source: Ponderosa Energy

The New-Well Spud Rate Has Fallen Dramatically; Most New Wells Are Now Horizontal

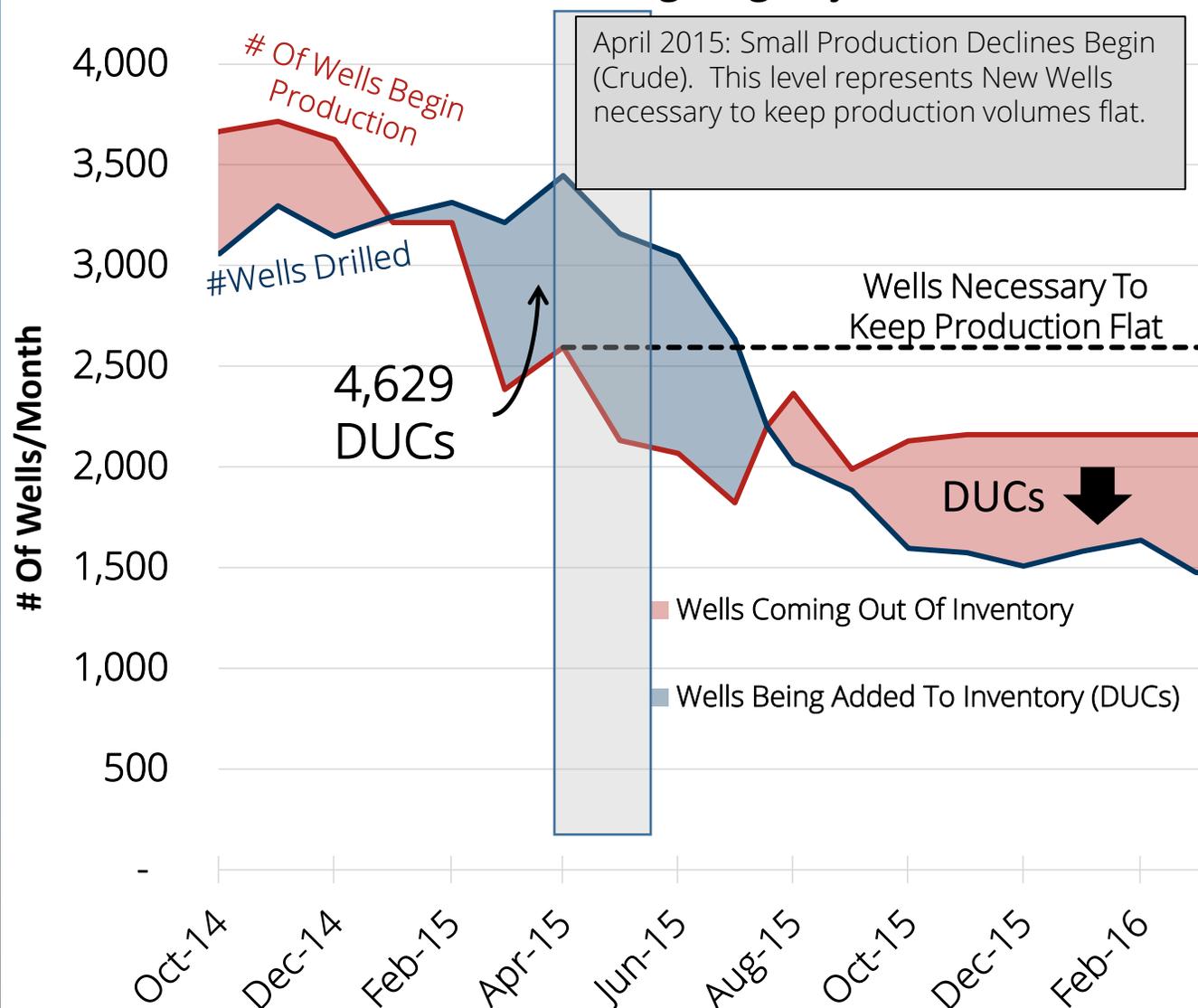
- New drilling is down significantly, but crude production has only fallen slightly and gas has actually increased so far this year.
 - Monthly spud rates are down significantly. We are now drilling ~12,000 new wells per year, down from the ~35,000 new wells that were drilled on average between 2010 and 2014
 - The rigs that are still active are predominantly horizontal and are much more productive than ever before.



Source: Rigdata

As A Result Of The Low Rig Count And Related New-Drilling Rate (Wells/Month), DUC Inventory Started Falling Late Last Year And Will Continue To Drop Based On Producer Guidance Plans

New Well Starts vs. New Drilling (Lag Adjusted)

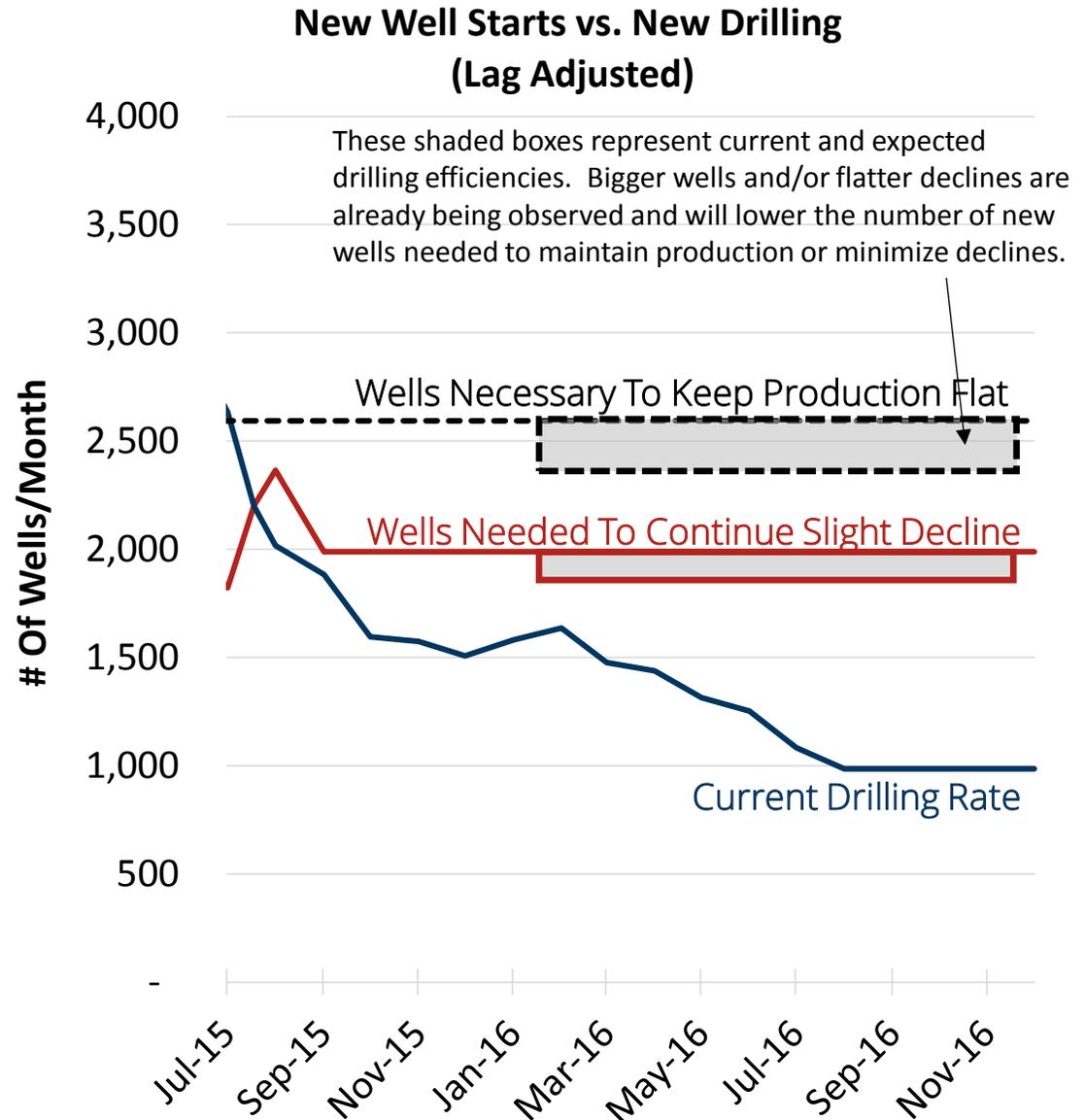


- We began drawing down DUCs late last year.
- The current drilling rate is approximately 986 wells/month; the number of wells coming online monthly recently averaged 1,961.
- Available DUC inventory is filling the gap between new drilling and the number of wells that are being completed and brought online currently.
- The normal average spud-to-production lag currently averages between 3 and 6 months depending on basin/play and operator (not including DUC inventory or wells that are outside this window).

Source: Ponderosa Energy, DrillingInfo, Rigdata

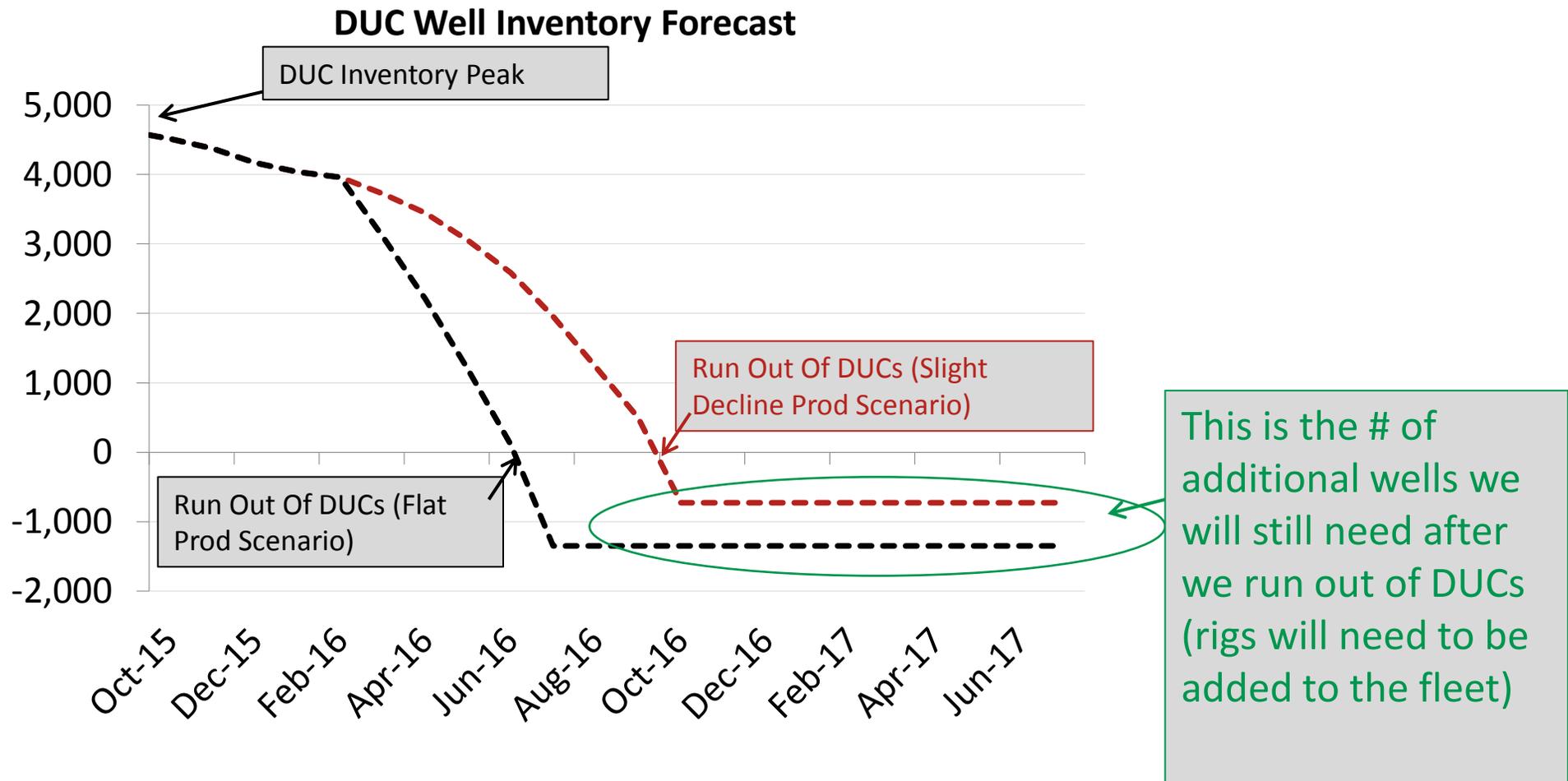
New Drilling And Drawing Down DUC Inventory Will Mitigate Production Declines This Year.

- Increased efficiencies across many plays mean new wells that must come online every month to hold production flat is lower than last year.
- Based on observed IP rate and type curve changes, we estimate the new wells needed to hold production flat is approximately 10% lower than April 2015 or 2,300 new wells/month.
- The level required to hold production declines at current levels is approximately 1,700 new wells/month.
- The current drilling rate is approximately 986 wells/month.



Source: Ponderosa Energy, Rigdata

DUC Inventory Will Likely Be Exhausted This Year; Expect A Price Response This Fall To Encourage Additional Drilling



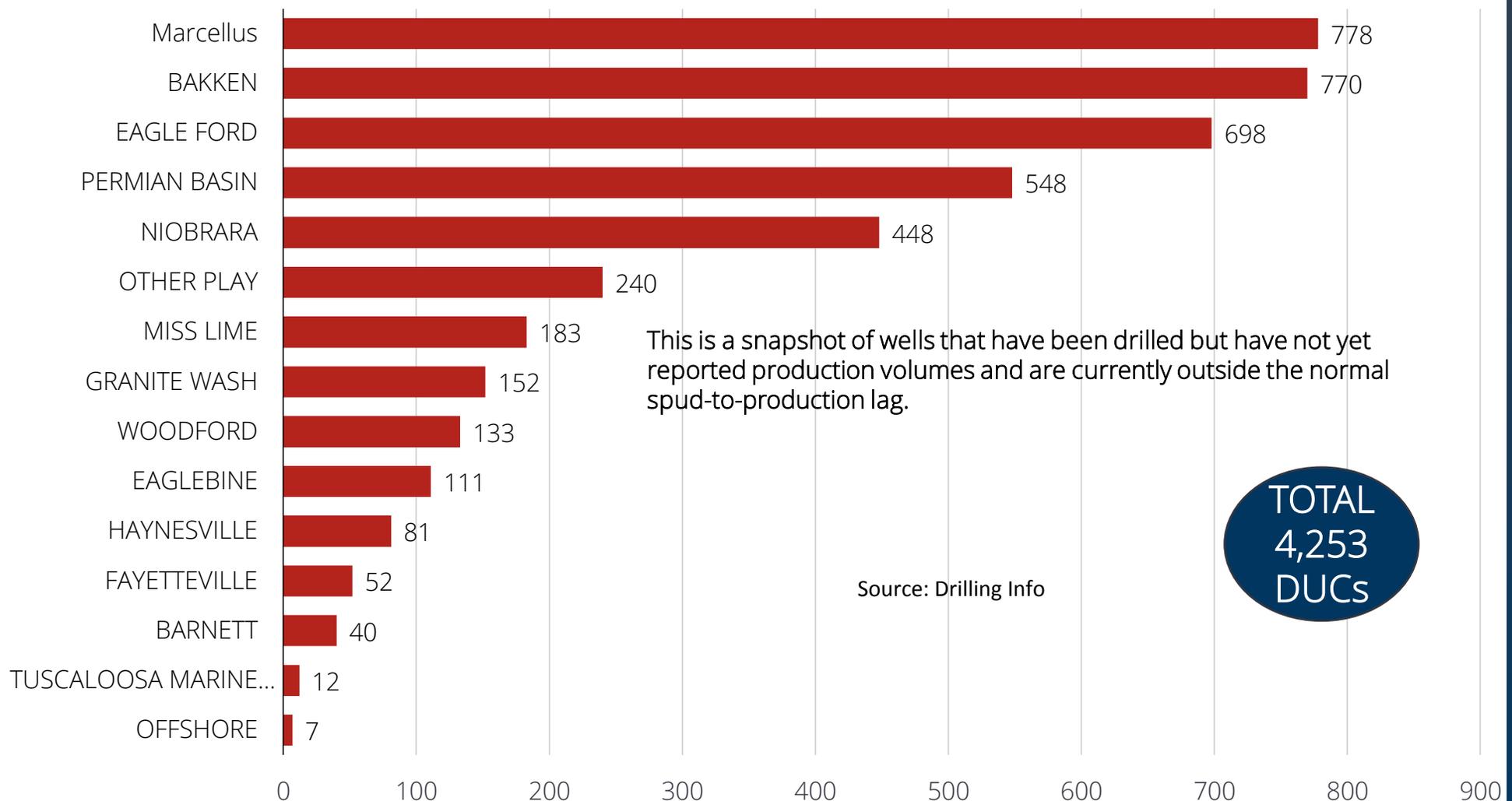
Keep In Mind:

- Location of DUCs matter.....if the DUCs we work through first are predominantly gas wells in the Northeast, then gas volume will prove more resilient and could even grow (crude volume would then decline faster than it has to-date), and vice versa.

Source: Ponderosa Energy, DrillingInfo, Rigdata

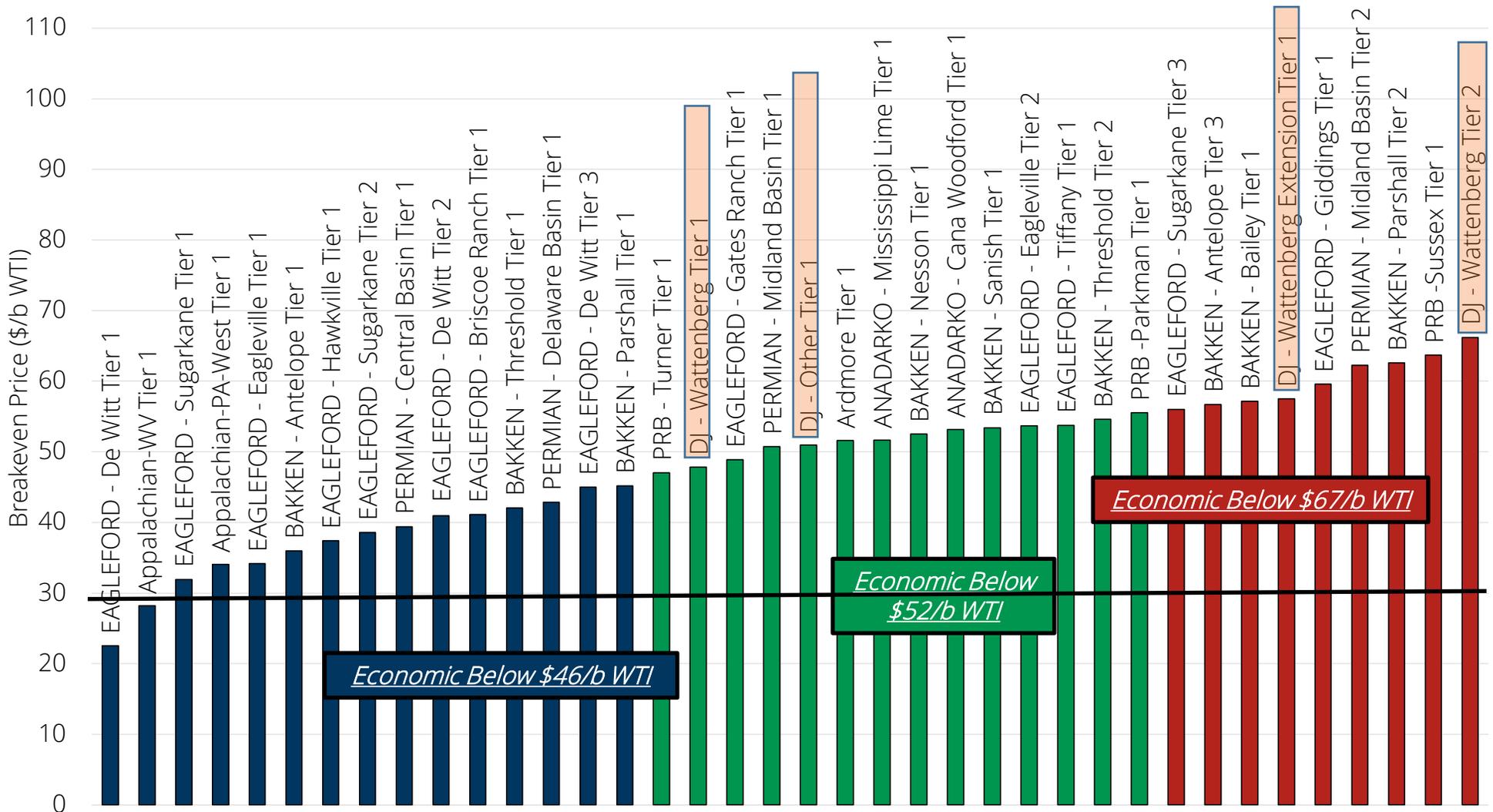
Upside Volume Risk: Drilled and Uncompleted Wells Inventory is High (AS OF JANUARY 2016)

- Ponderosa's analysis of Drilling Info data shows almost 4,250 wells that have been drilled but not completed in the U.S. Assuming an initial production rate of 200 Mb/d, output from these wells would be about 835 Mb/d if all were put into production simultaneously.

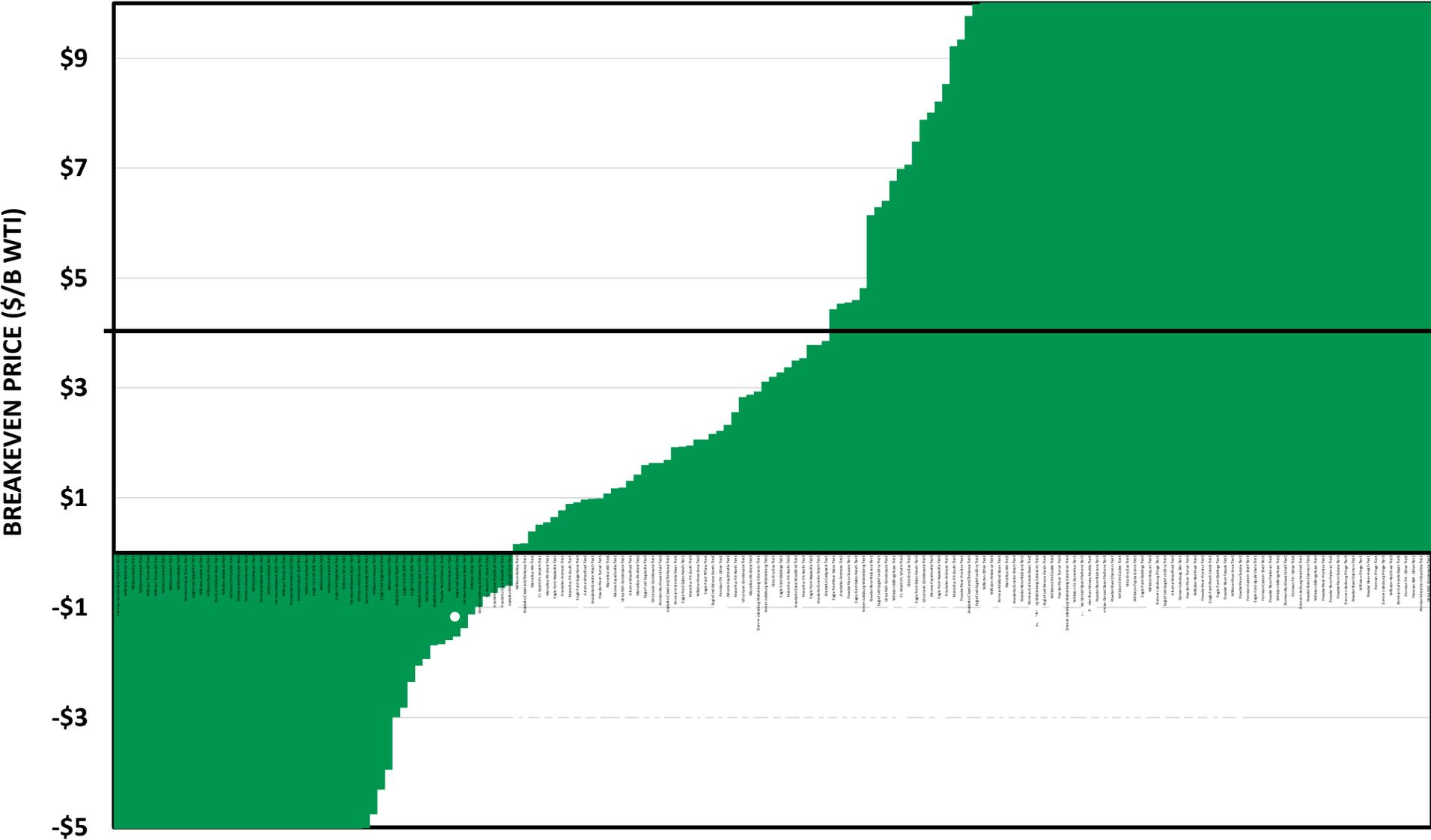


Economic Areas Below \$67 WTI Exist Across All Major Unconventional U.S. Basins

- The fields shown here are the most economic areas in the continental U.S., and do not include dry-gas-only fields/basins. Tier 1 areas are the most economic across the country and every major basin is represented in the stack below. Very few Tier 2 and Tier 3 areas make the list.



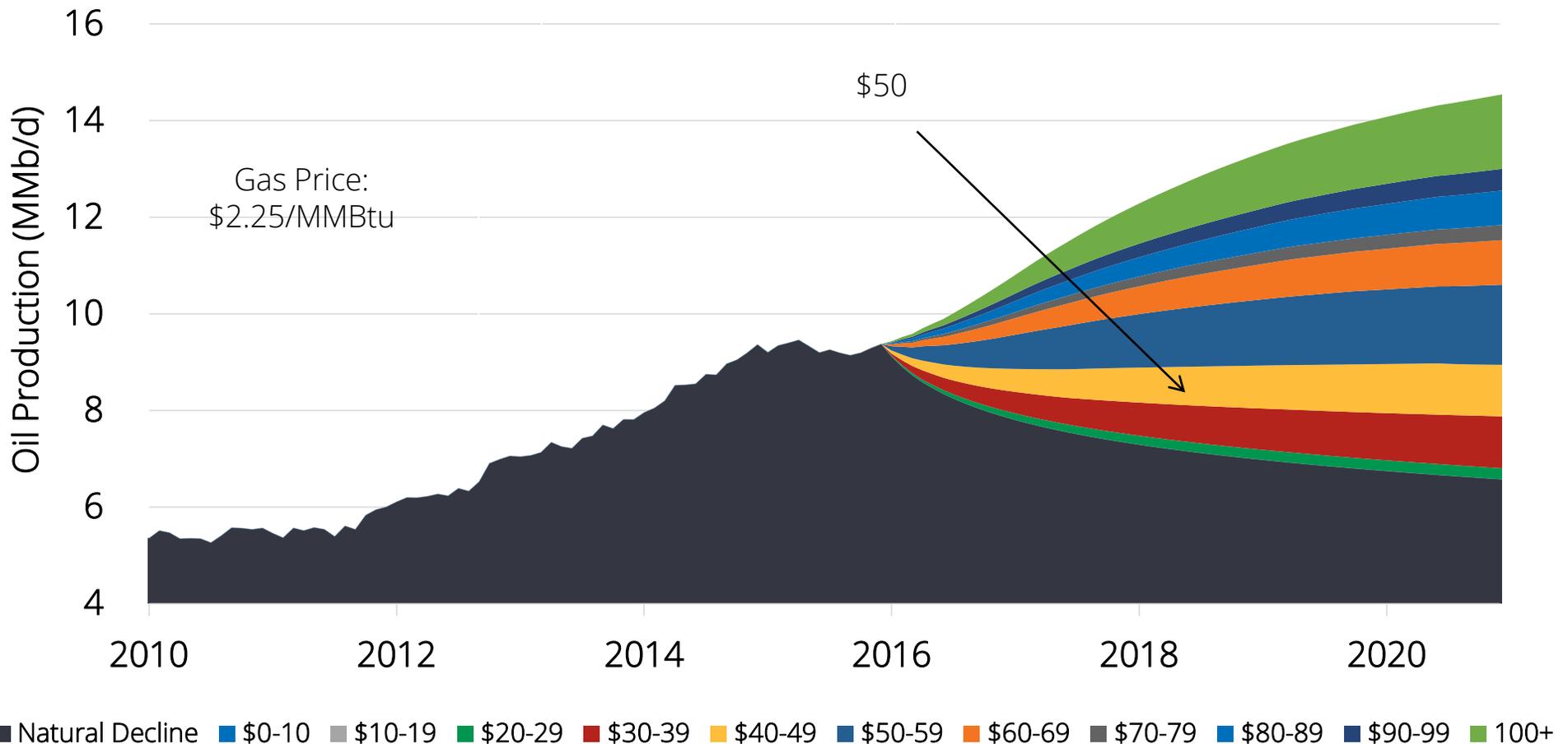
Gas Breakevens At \$60 WTI Prices



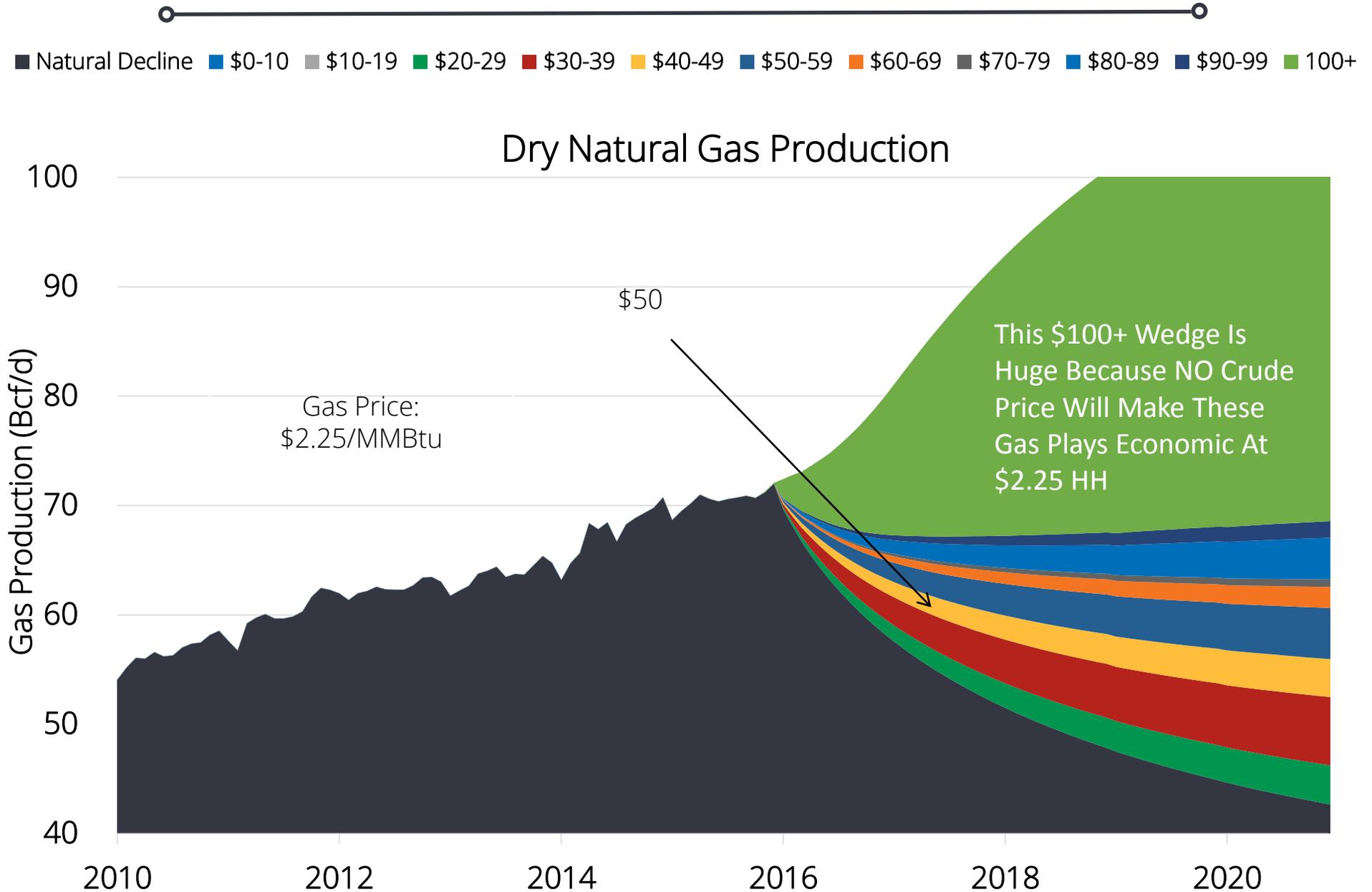
U.S. Production Won't Fall Dramatically, but Growth Will Require Price Recovery

- WTI \$60/bbl crude with \$2.25/MMBtu gas is enough to mitigate oil production declines. Each colored band represents volume at \$10 increments (based on breakeven economics).
- Higher crude OR gas prices are necessary for production gains to materialize. Current prices are too low to generate production gains.

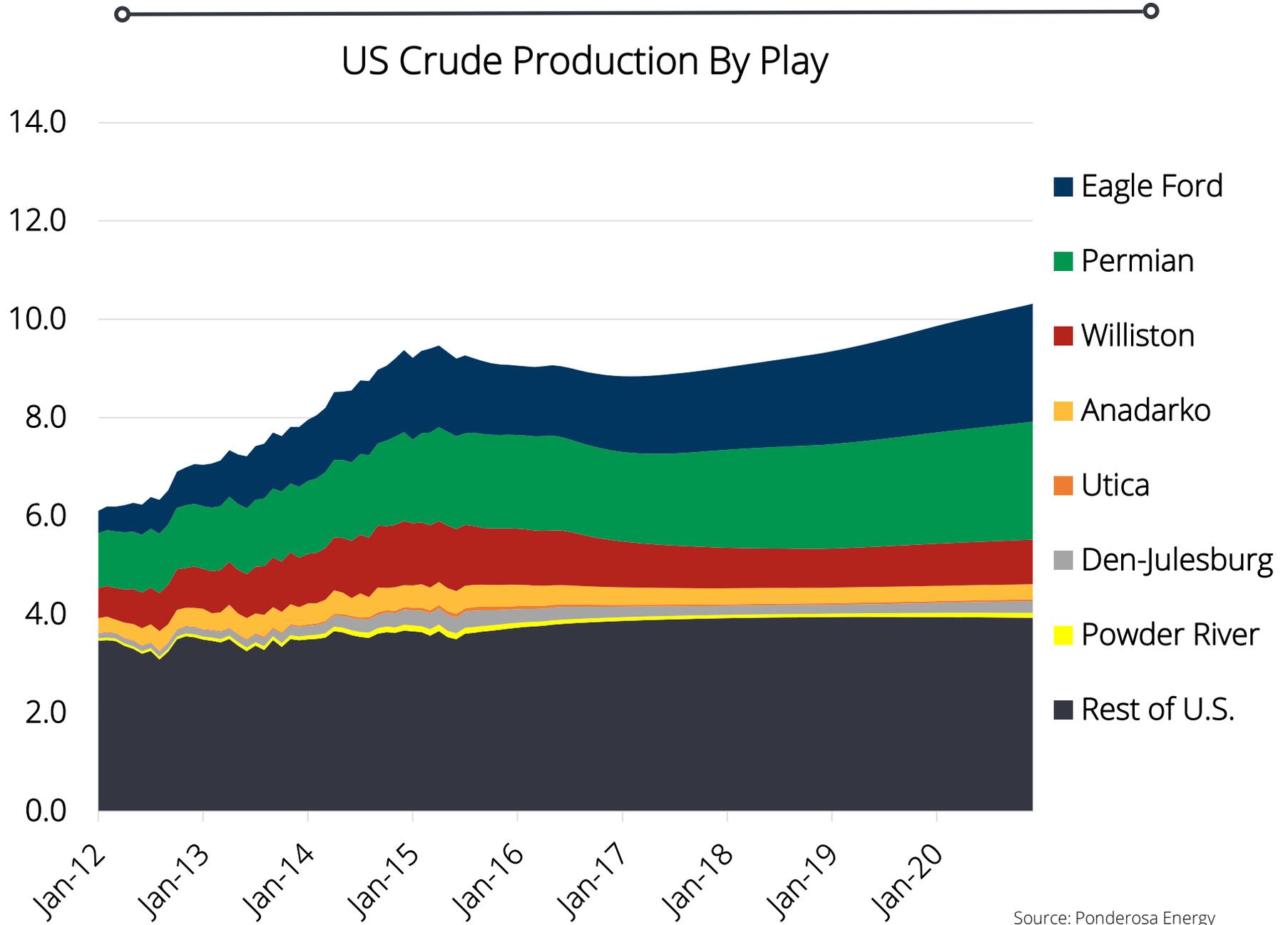
Crude Oil Production



Gas Production Declines Are More Significant



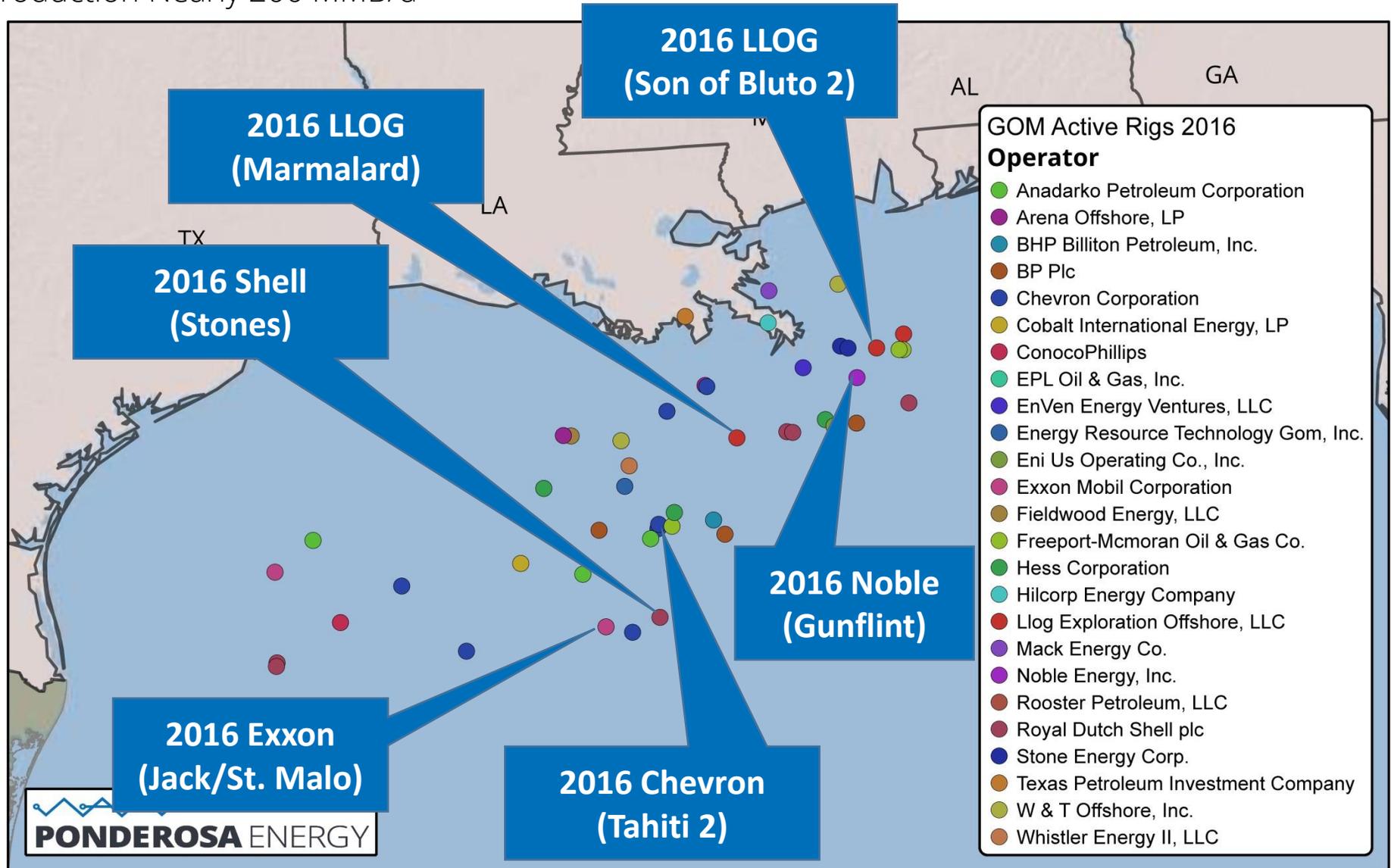
Eagle Ford, Permian Will Lead U.S. Crude Oil Production Growth



Source: Ponderosa Energy

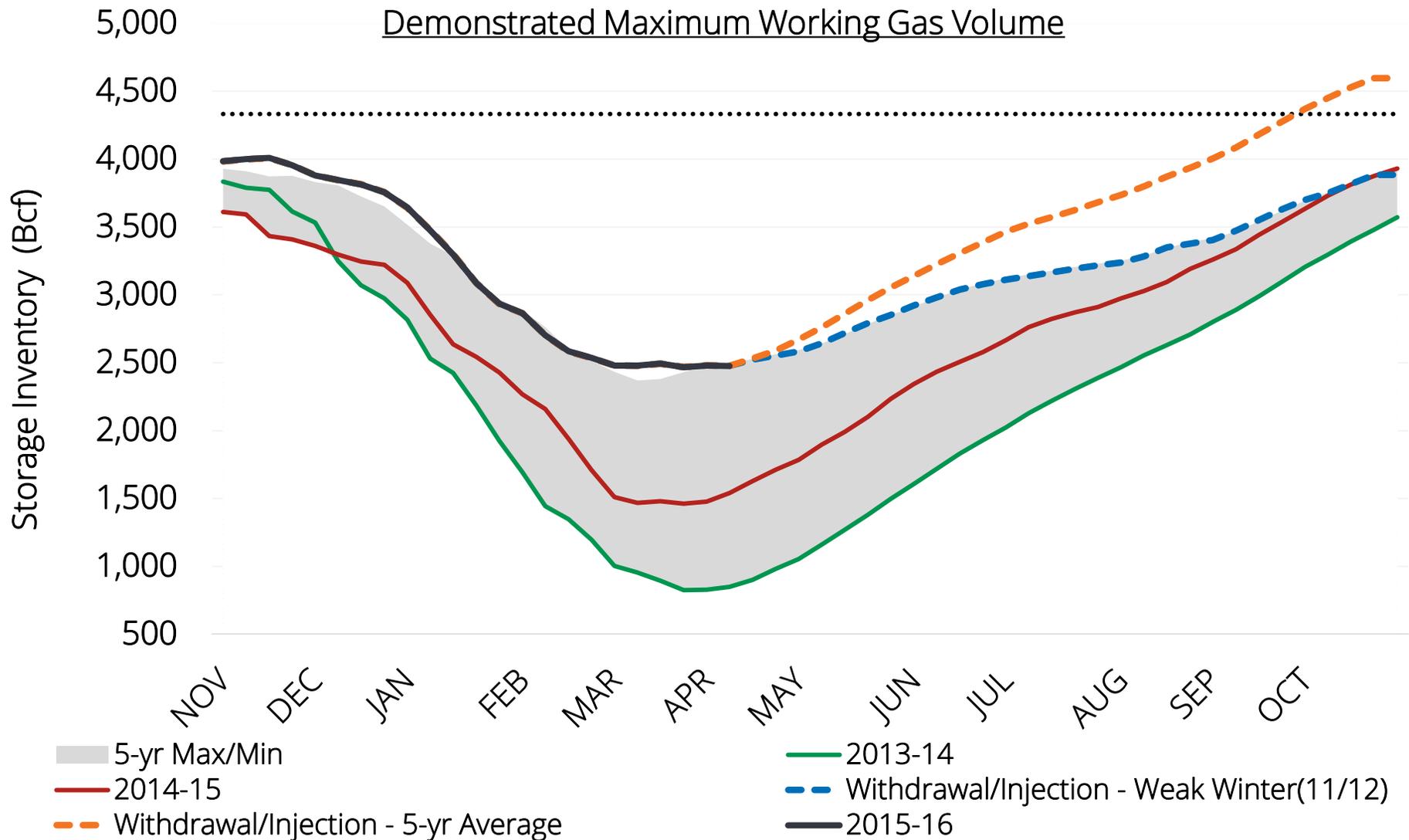
Gulf Of Mexico Production Is Expected To Grow Again This Year

- There Are Five Offshore GOM Projects Expected To Come Online In 2016 & Increase Crude Production Nearly 200 MMB/d



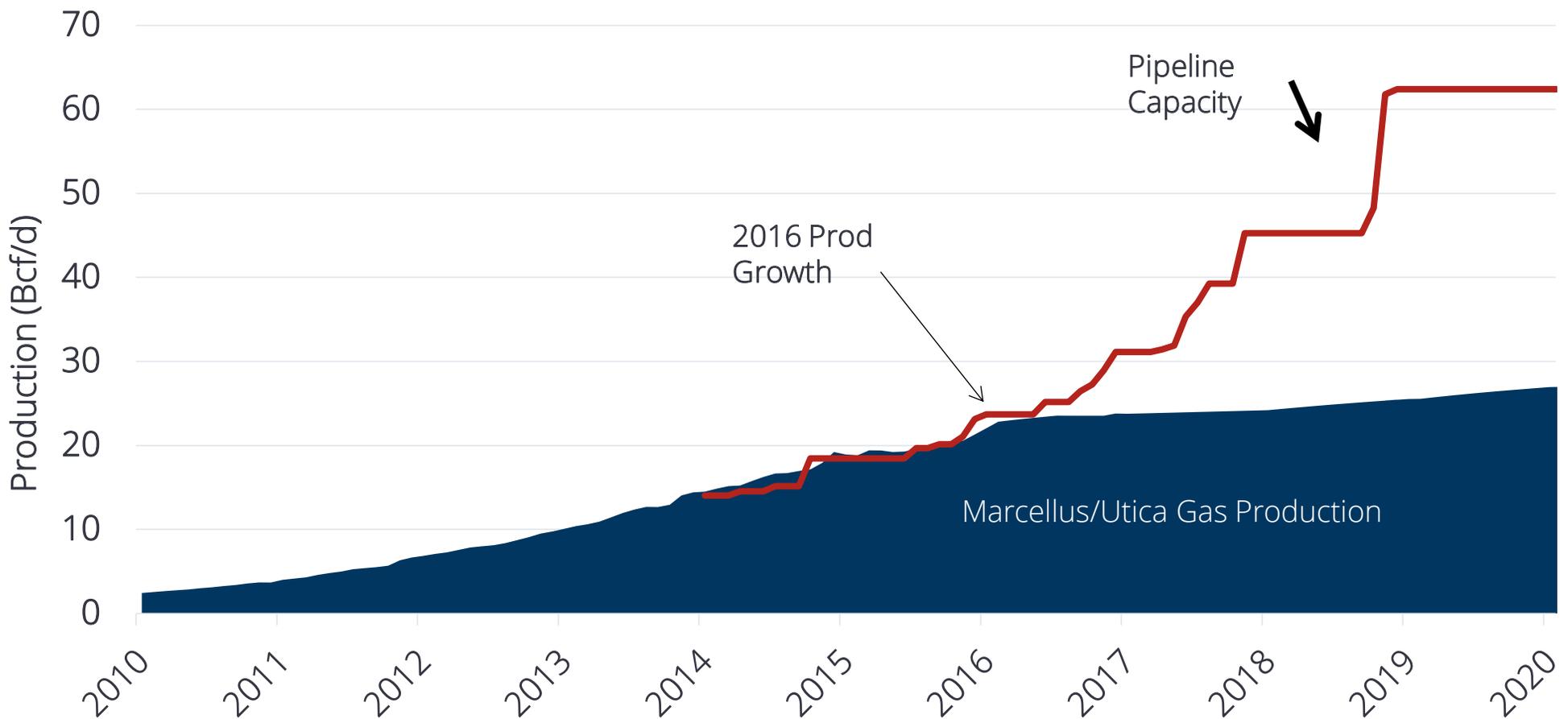
Source: Rigdata, Ponderosa Energy

Natural Gas...Lets Start With Storage



Marcellus/Utica Production Is At Record Levels...Infrastructure Bottlenecks Are Going Away

- Northeast production growth will remain steady over the next five years, and significant pipeline capacity – an additional 38.7 Bcf/d – to move gas from the region is scheduled to come online during the period. About 3.5 Bcf/d of capacity is coming online in 4Q2015 and helping to relieve bottlenecks.



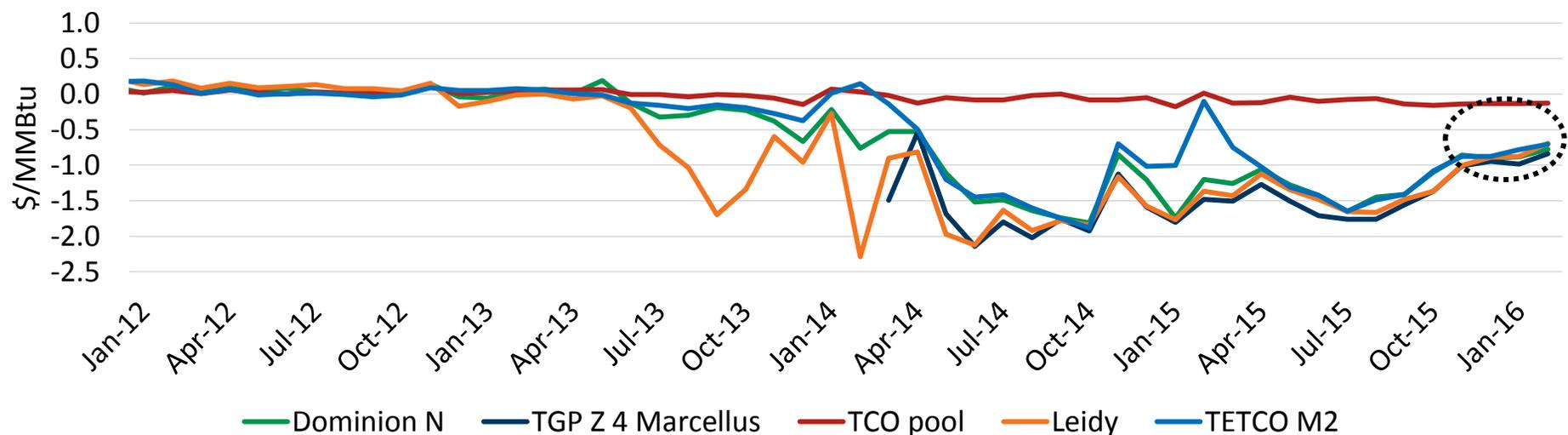
Source: Ponderosa Energy

Northeast Basis Lifting With Additional Takeaway Capacity

- Pipeline takeaway capacity from the Marcellus/Utica shale is limited and producers are filling up new pipelines as soon as they become available.
- Price basis in the region recovered from summer lows, but most importantly gained some stability.
- By the end of the year, 10 more projects are expected to come online and add about 3.8 Bcf/d of capacity. Most projects will be available for winter 2016-17.
- Ponderosa expects Northeast basis will eventually trade within variable transportation costs, expected to be in a range of ~50 cents. This trend is likely within the next 12-18 months as takeaway capacity is added and bottlenecks are alleviated.

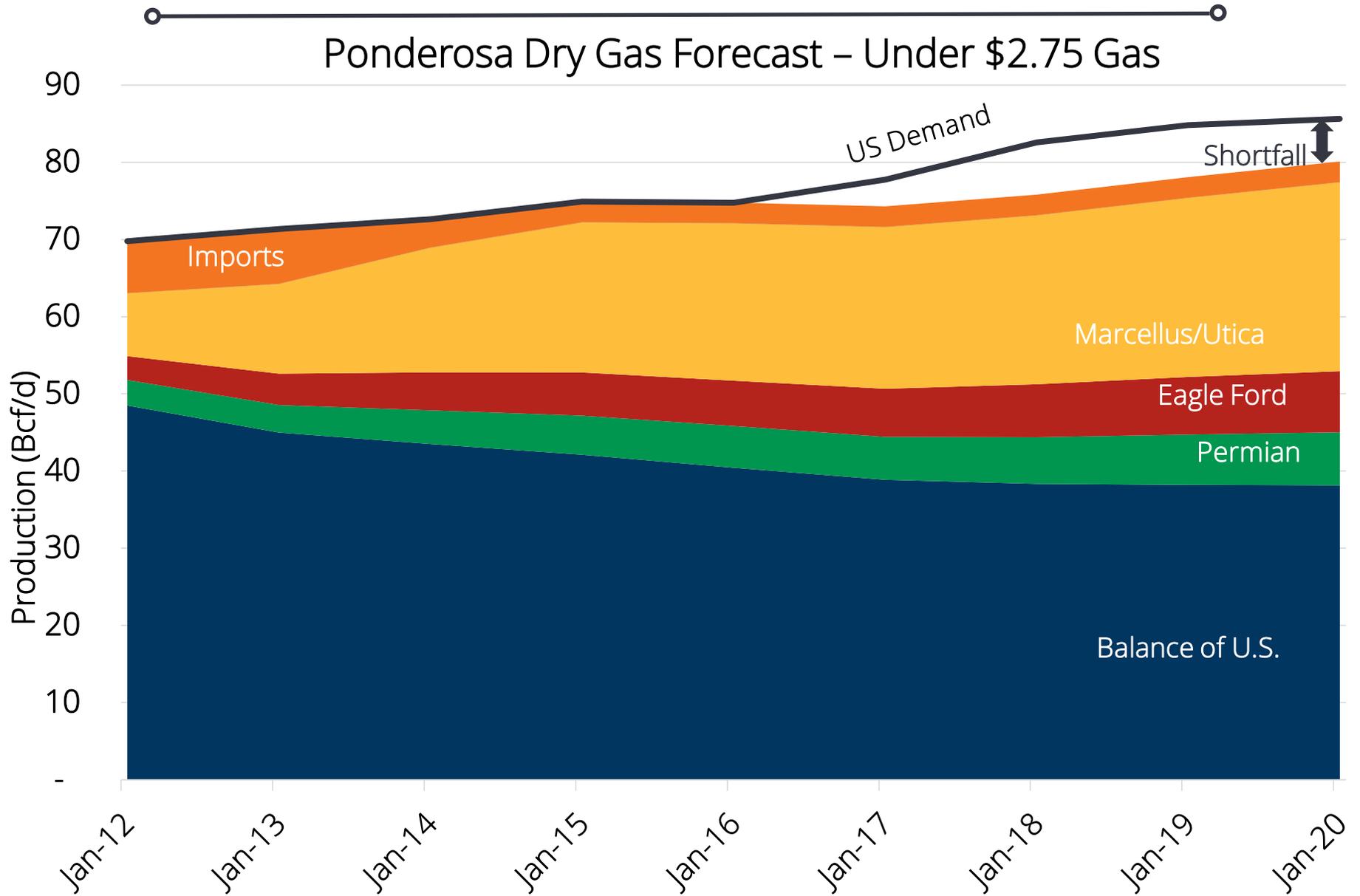
Project name	Pipeline	In-Service Date	Status	Capacity (Bcf/d)
Ohio to Louisiana Access Project	Texas Gas	June16	Under Construction	0.63
Rock Springs Lateral	Transco	Aug16	Under Construction	0.19
Ohio Valley Connector (OVC)	Equitrans	Oct16	Under Construction	0.85
Utica Access Project	TCO	Oct16	Under Construction	0.21
Incremental Market Project (AIM)	AGT	Nov16	Under Construction	0.34
Clarington Project	DTI	Nov16	Under Construction	0.25
Gulf Markets Expansion Phase I	TETCO	Nov16	Under Construction	0.25
New Market Project	DTI	Nov16	FERC Certified	0.11
Chicago Market Expansion Project	NGPL	Nov16	Filed	0.24
REX Zone 3 Capacity Enhancement	REX	Dec16	Under Construction	0.80
TOTAL				3.8

Northeast Basis – Monthly Averages



Source: SNL, Ponderosa Energy

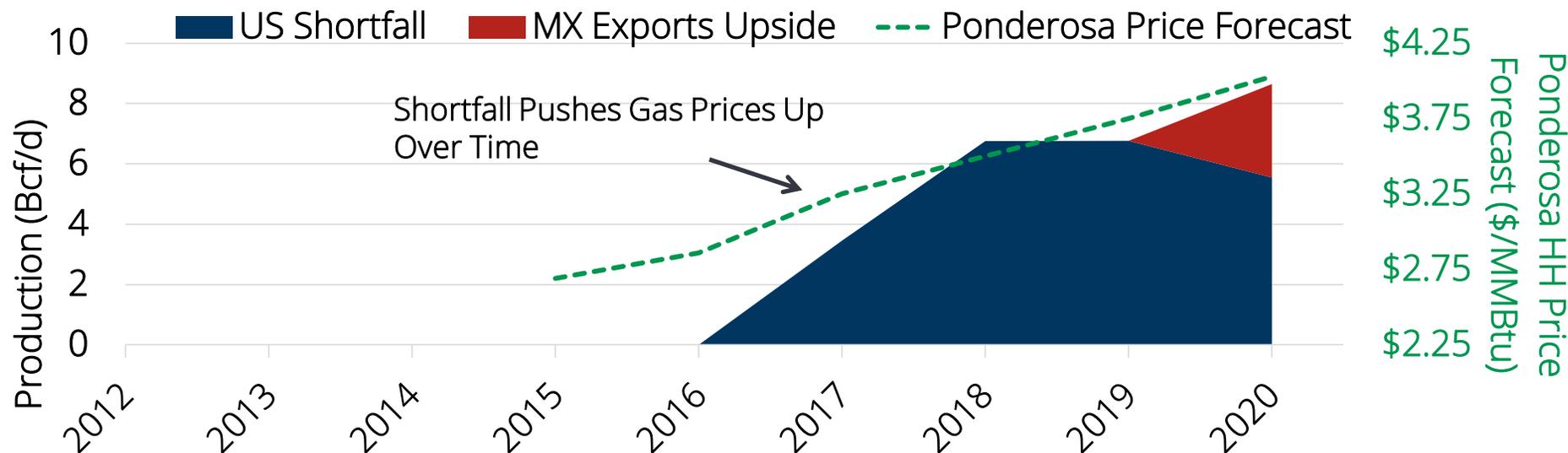
Increase in Demand Could Lead to Gas Shortfall



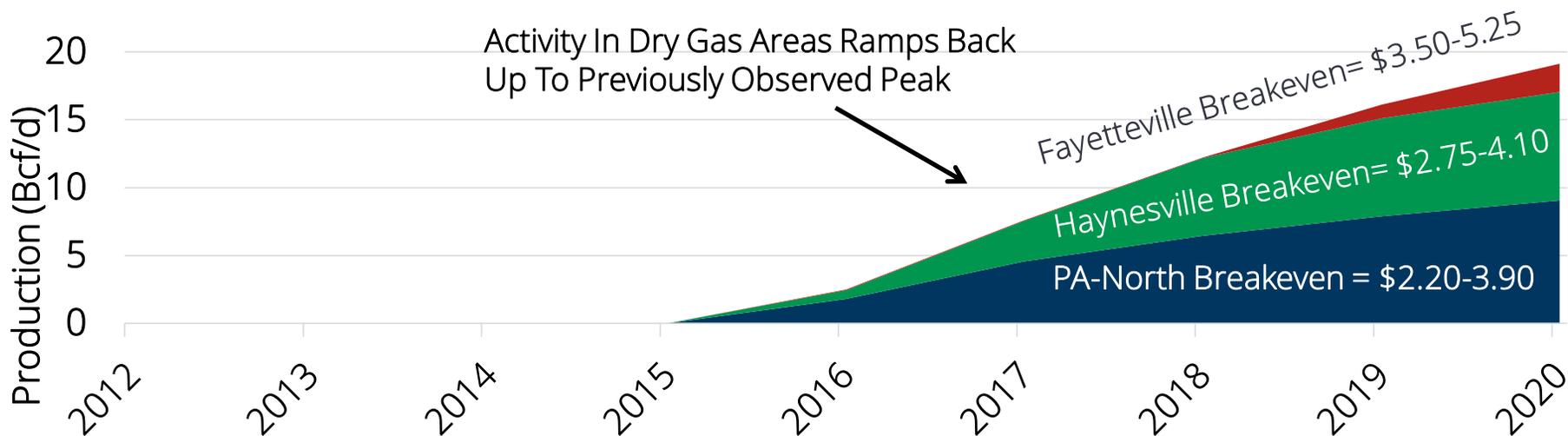
Source: Ponderosa Energy

Gas Supply Shortfall Likely If Prices Remain Below \$3.00; Improved Gas Prices Are Likely

Supply 'Shortfall' From Last Slide

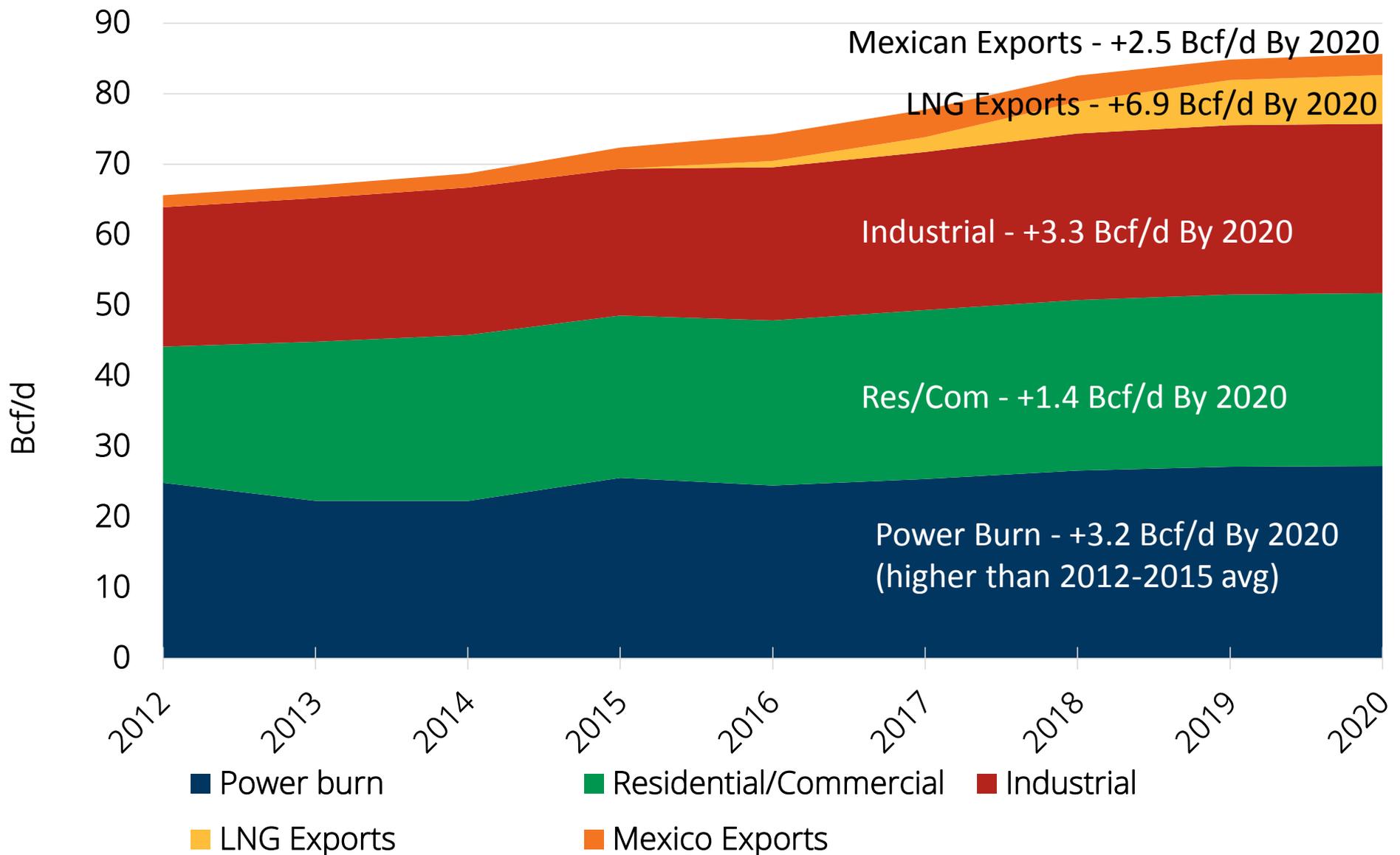


Incremental Volumes From Dry Gas Areas Will Fill The Shortfall

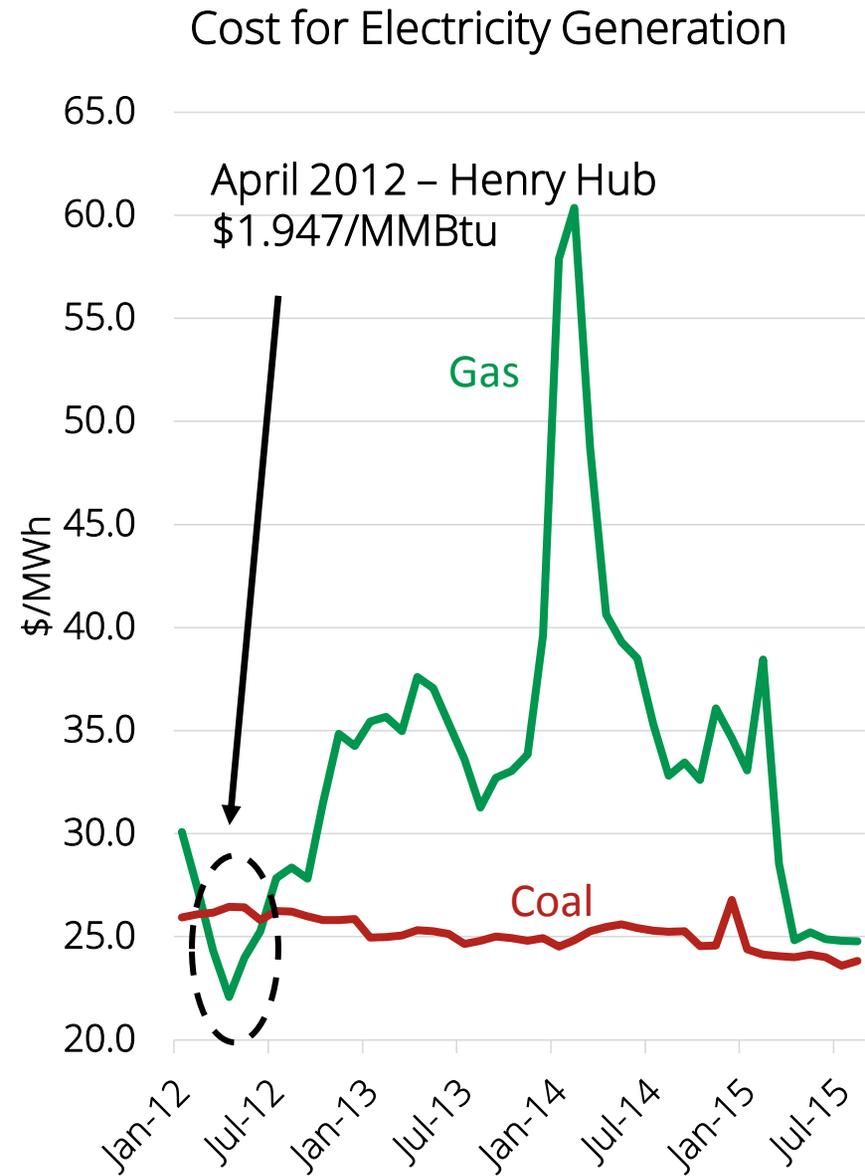
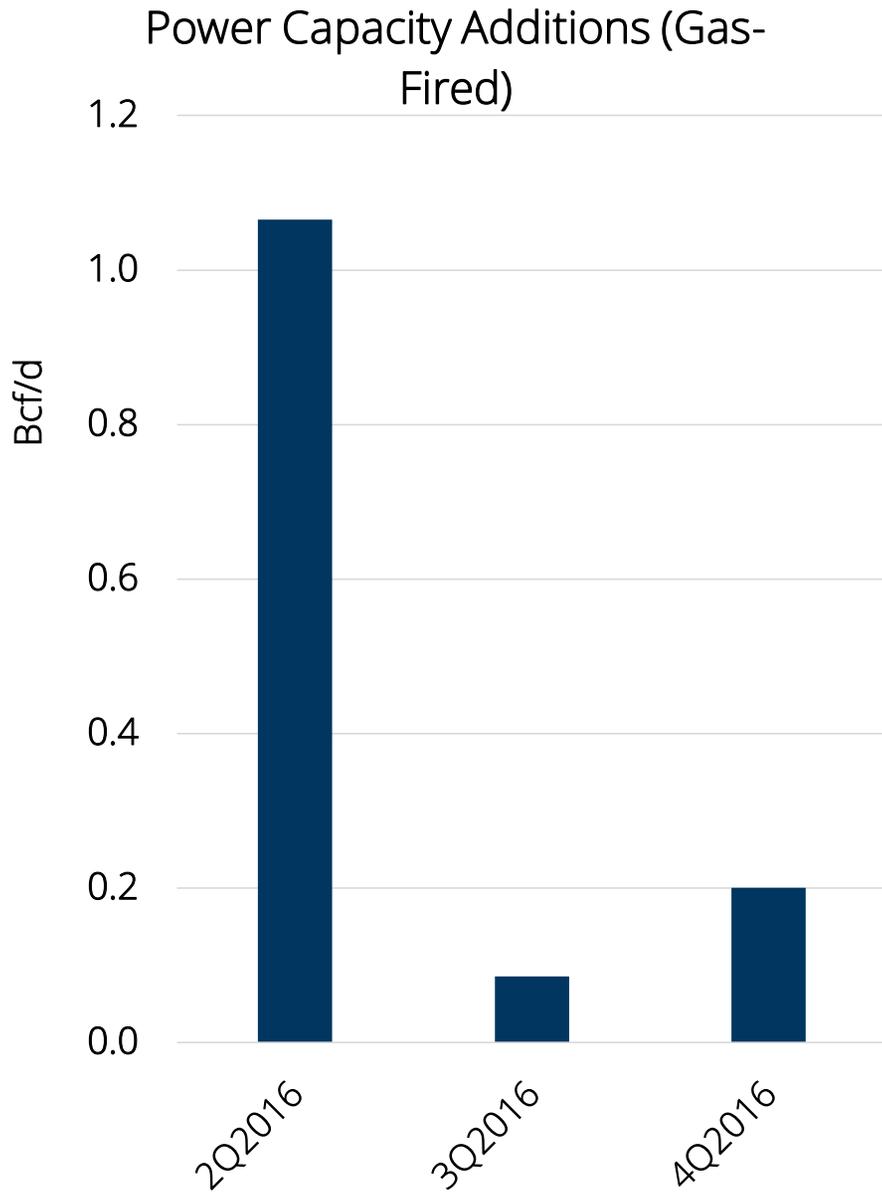


U.S. Natural Gas Demand

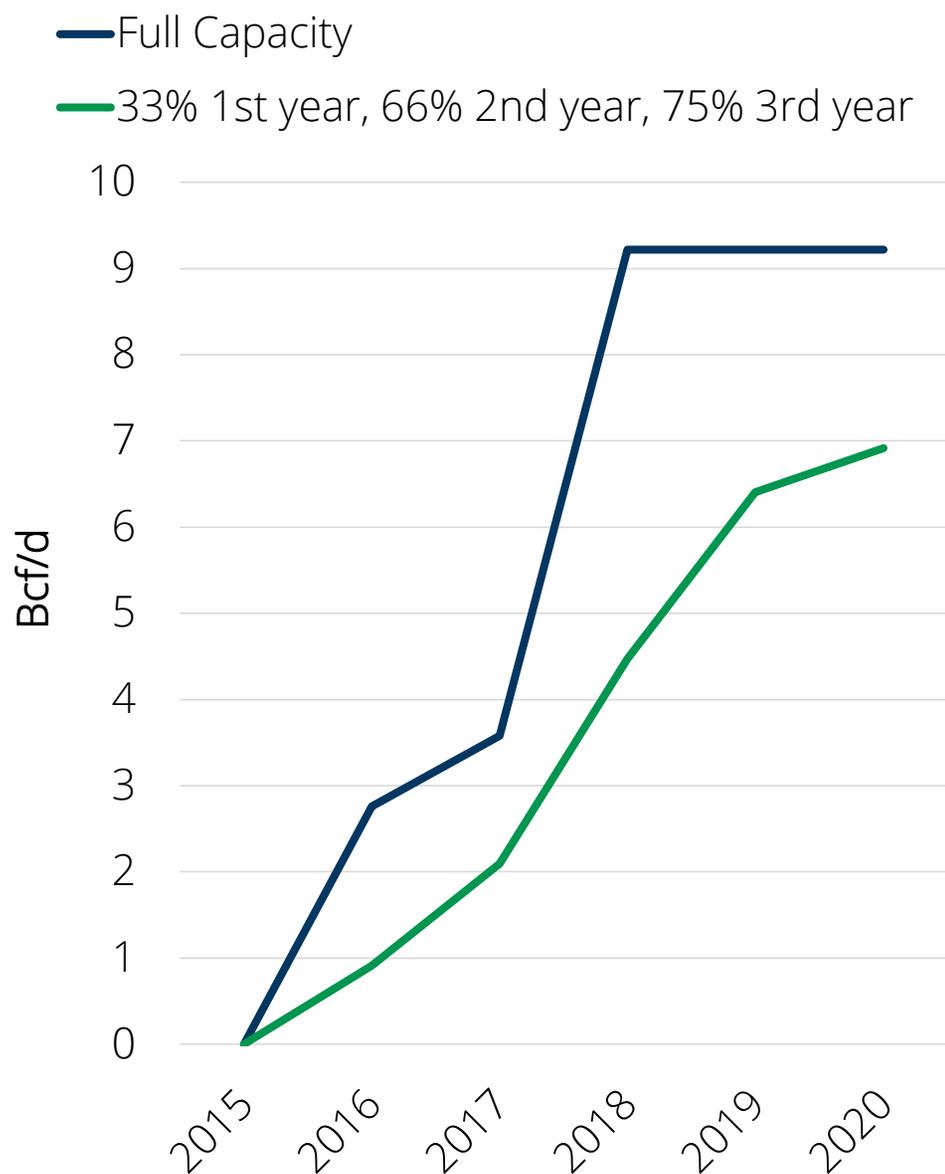
Demand Will Average 85.6 Bcf/d in 2020



Infrastructure Coal-to-Gas Switching Drives Higher Use of Gas Over Coal



Natural Gas Demand Forecast: LNG Exports

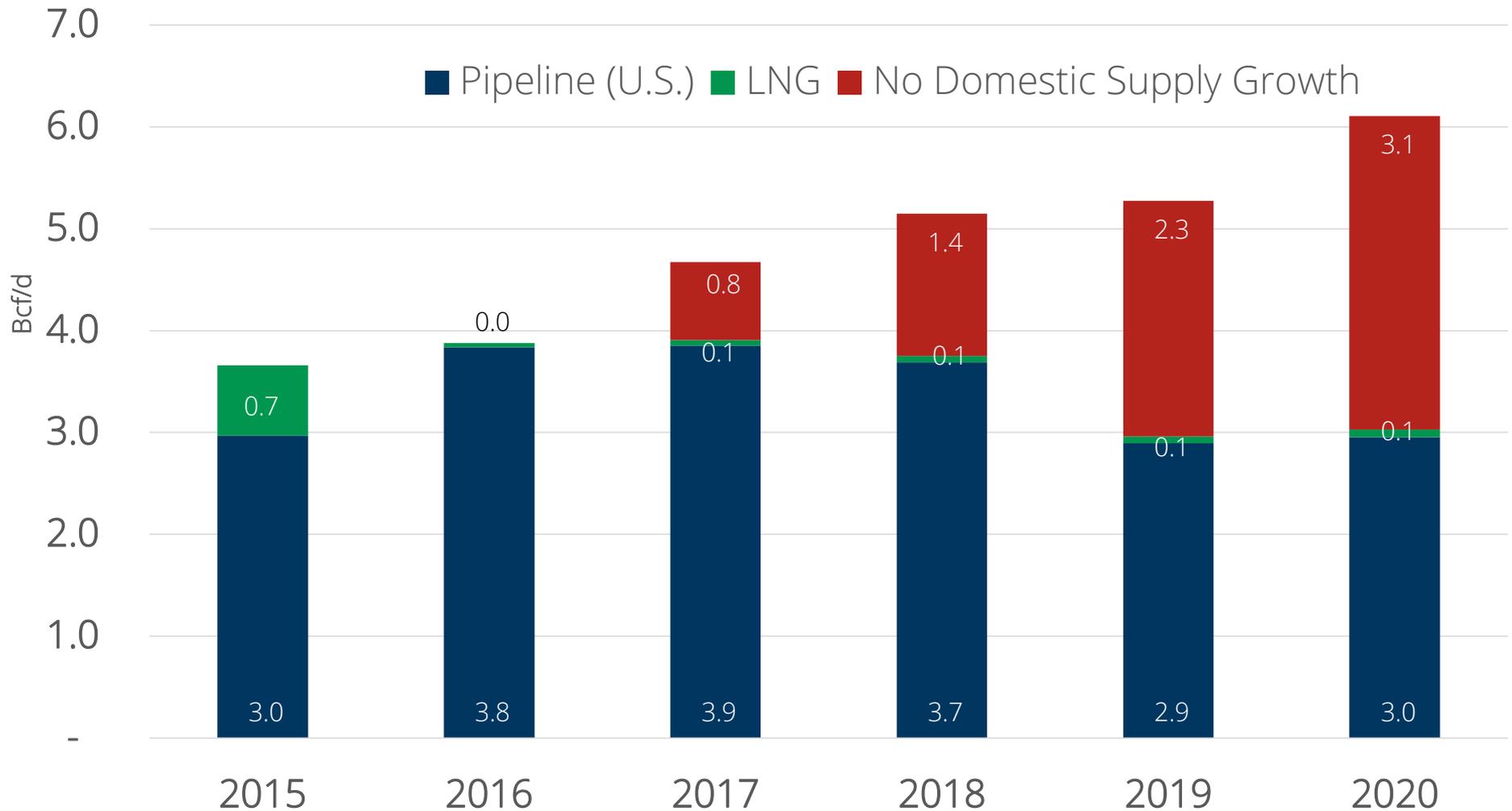


➤ Risks To This Forecast:

- 1. Low crude prices have impacted global crude-linked LNG projects...Henry Hub/LNG price spread has collapsed.
- 2. Coal prices will also impact LNG demand (and prices) in Europe and Asia. Many power generators in those regions, not facing the same emissions regulations as U.S. utilities, will run coal units instead of using natural gas if coal prices are cheaper.
- 3. The total global LNG import market in 2014 was 31.2 Bcf/d.....7 Bcf/d would be 22% of that market.
- 4. There are other large-scale LNG liquefaction projects coming under construction...its not just new US supply hitting the market.
 - Australia
 - Malaysia
 - Columbia
 - Russia

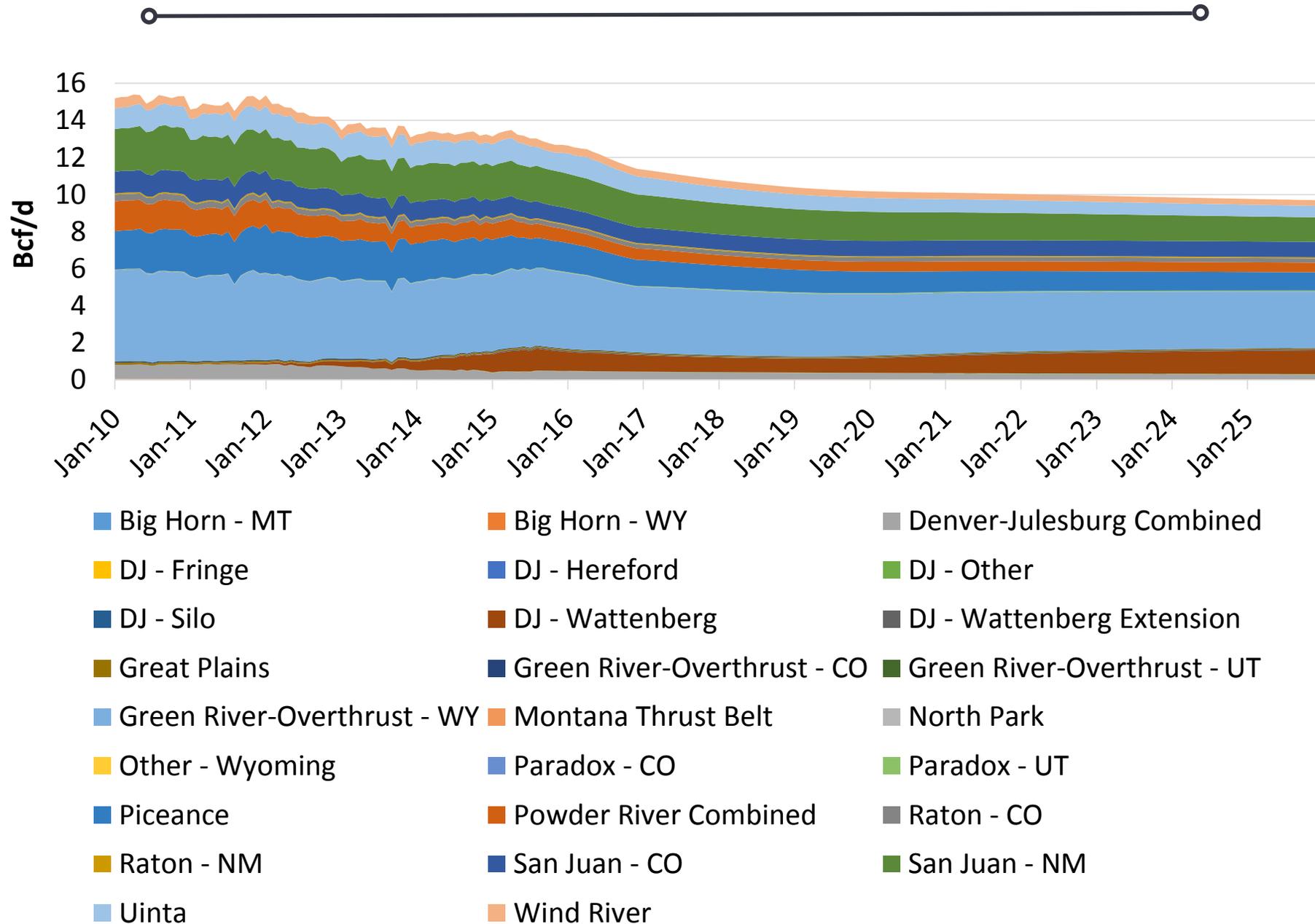
U.S. Exports to Mexico Limited by Projected Mexican Production Growth

Natural Gas Mexican Imports



Source: Mexico The Secretariat of Energy Natural Gas and L.P. Gas Outlook 2014-18

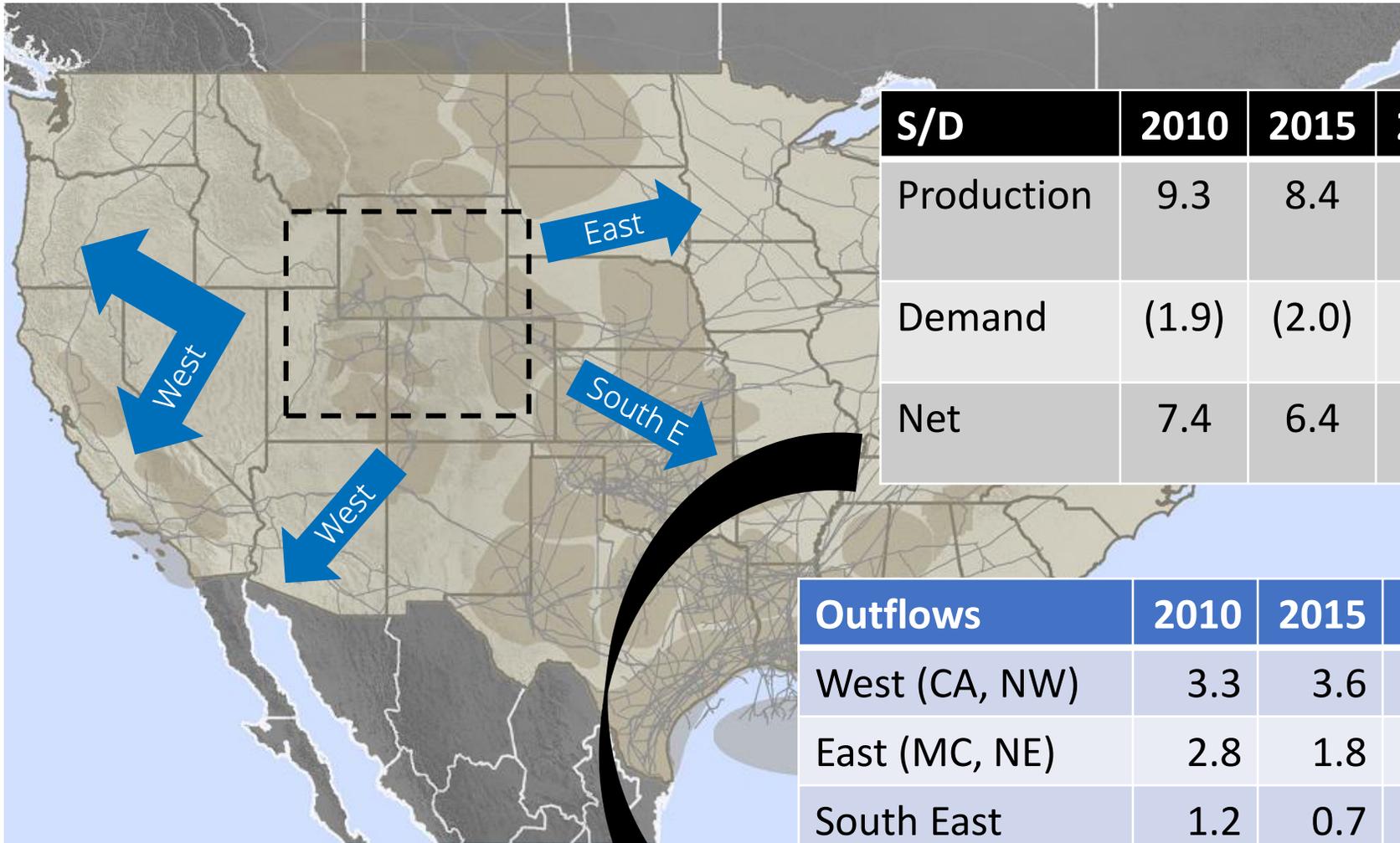
Rockies Gas Production Forecast by Basin



Rockies Production Forecast by Basin

Production in MMcf/d	2010	2015	2020	2025	2010-15 Chg	2015-20 Chg	2020-25 Chg
Green River-Overthrust - WY	4,825	4,133	3,281	3,037	-14%	-21%	-7%
San Juan - NM	2,344	1,896	1,539	1,337	-19%	-19%	-13%
DJ - Wattenberg	6	1,098	853	1,267		-22%	48%
Piceance	2,170	1,695	1,139	990	-22%	-33%	-13%
San Juan - CO	1,193	905	839	835	-24%	-7%	0%
Uinta	1,156	1,116	732	625	-3%	-34%	-15%
Powder River Combined	1,571	805	536	521	-49%	-33%	-3%
Wind River	497	426	354	307	-14%	-17%	-13%
Denver-Julesburg Combined	769	403	319	262	-48%	-21%	-18%
Raton - CO	345	238	230	232	-31%	-3%	1%
DJ - Wattenberg Extension	0	67	55	67		-18%	21%
Raton - NM	72	62	60	60	-14%	-2%	-1%
Paradox - UT	26	32	46	49	21%	43%	8%
Great Plains	115	63	51	45	-45%	-19%	-12%
Big Horn - WY	45	35	29	26	-22%	-17%	-9%
DJ - Other	0	12	19	24		55%	32%
Green River-Overthrust - CO	54	36	24	19	-33%	-35%	-18%
Paradox - CO	26	15	13	11	-41%	-16%	-12%
Green River-Overthrust - UT	22	12	8	6	-46%	-37%	-20%
Montana Thrust Belt	5	4	3	3	-33%	-12%	-8%
Big Horn - MT	4	3	3	3	-25%	-11%	-7%
DJ - Silo	1	5	2	1		-59%	-40%
DJ - Hereford	1	2	1	1		-56%	-40%
DJ - Fringe	0	6	1	0		-87%	-49%
North Park	0	1	0	0		-86%	-49%
Other - Wyoming	0	0	0	0			
TOTAL	15,246	13,068	10,136	9,729	-14%	-22%	-4%

Rockies Balance



S/D	2010	2015	2020	2025
Production	9.3	8.4	6.8	6.7
Demand	(1.9)	(2.0)	(2.4)	(2.6)
Net	7.4	6.4	4.4	4.1

Outflows	2010	2015	2020	2025
West (CA, NW)	3.3	3.6	3.7	3.7
East (MC, NE)	2.8	1.8	0.7	0.4
South East	1.2	0.7	0.0	0.0
Storage/Balance	0.1	0.1	0.0	0.0
Total	7.4	6.4	4.4	4.1

Key Takeaways

- Crude oil prices are still depressed due to resilient supply, and insufficient demand growth. Ponderosa is currently forecasting \$52 avg WTI in 2017 and \$60 in 2018. Structural events are still the biggest risk (example: Kuwait Strike)
- Access-to-capital issues are popping up more and we're watching spring re-redetermination closely. We will see additional bankruptcies and consolidation.
- Associated Natural Gas is being impacted by lower crude-directed drilling and low gas prices. We expect slightly declining production so long as crude prices remain below \$50 AND gas prices remain below \$2.50.
- Ponderosa expects short-term gas prices will remain low due to record storage levels and forecasts of a moderate winter in the Lower 48, but will rise later in 2016 to a Q4 average of \$2.86. The forecast calls for prices to trend higher and reach \$4.03 in 2020.
- Gas and Crude prices will recover; gas will likely hit \$4 again by 2020.
- Rockies gas and oil production will continue a slow decline; drilling economics are challenged at current and expected future prices.



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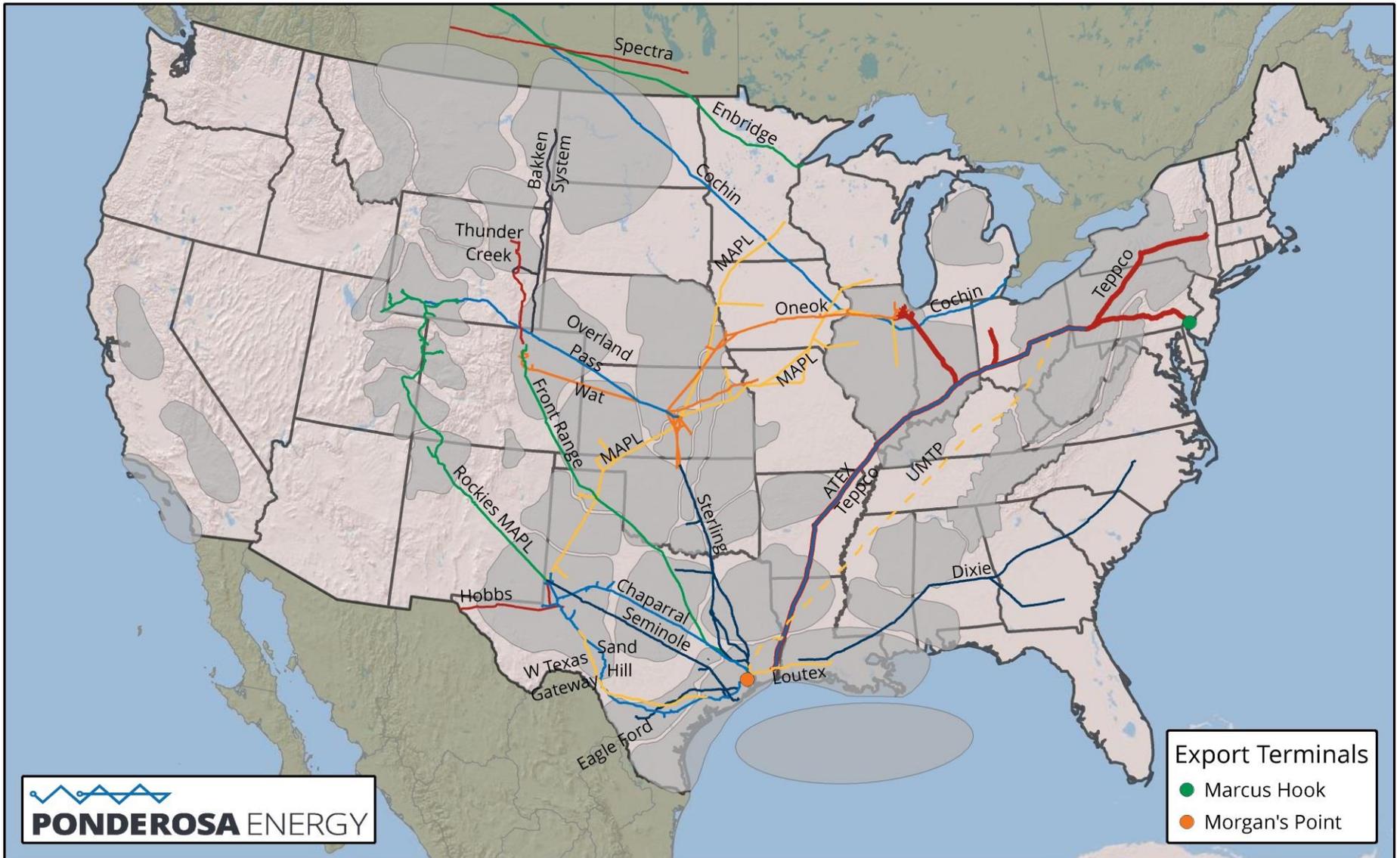
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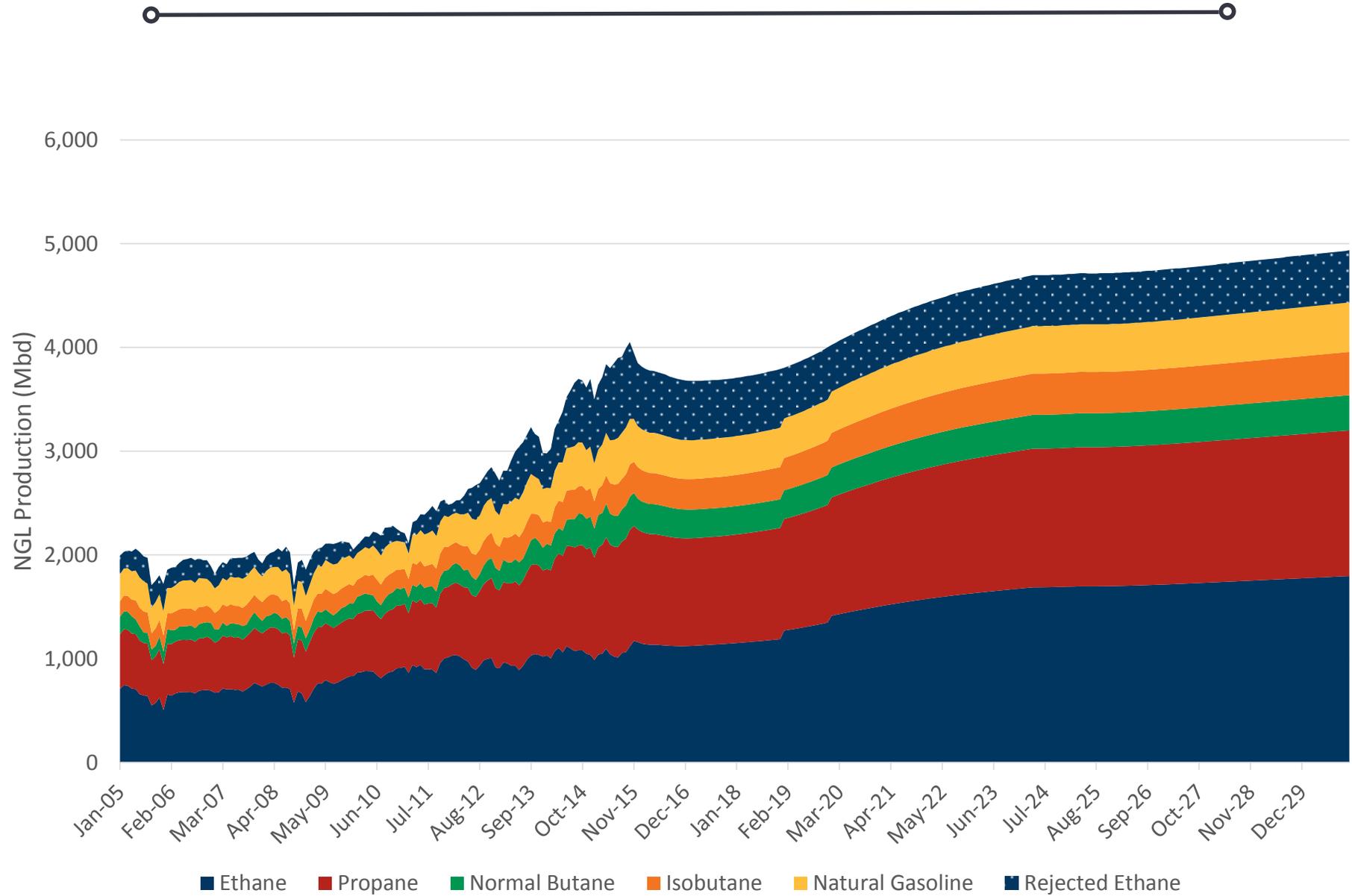
Bernadette Johnson
Managing Partner
Ponderosa Advisors, LLC (DBA Ponderosa Energy)
621 17th Street, Suite 2800
Denver, CO 80293
(303) 309-4078
bjohnson@Ponderosa-Advisors.com

Energy Team Direct Email:
EnergyGroup@Ponderosa-Advisors.com

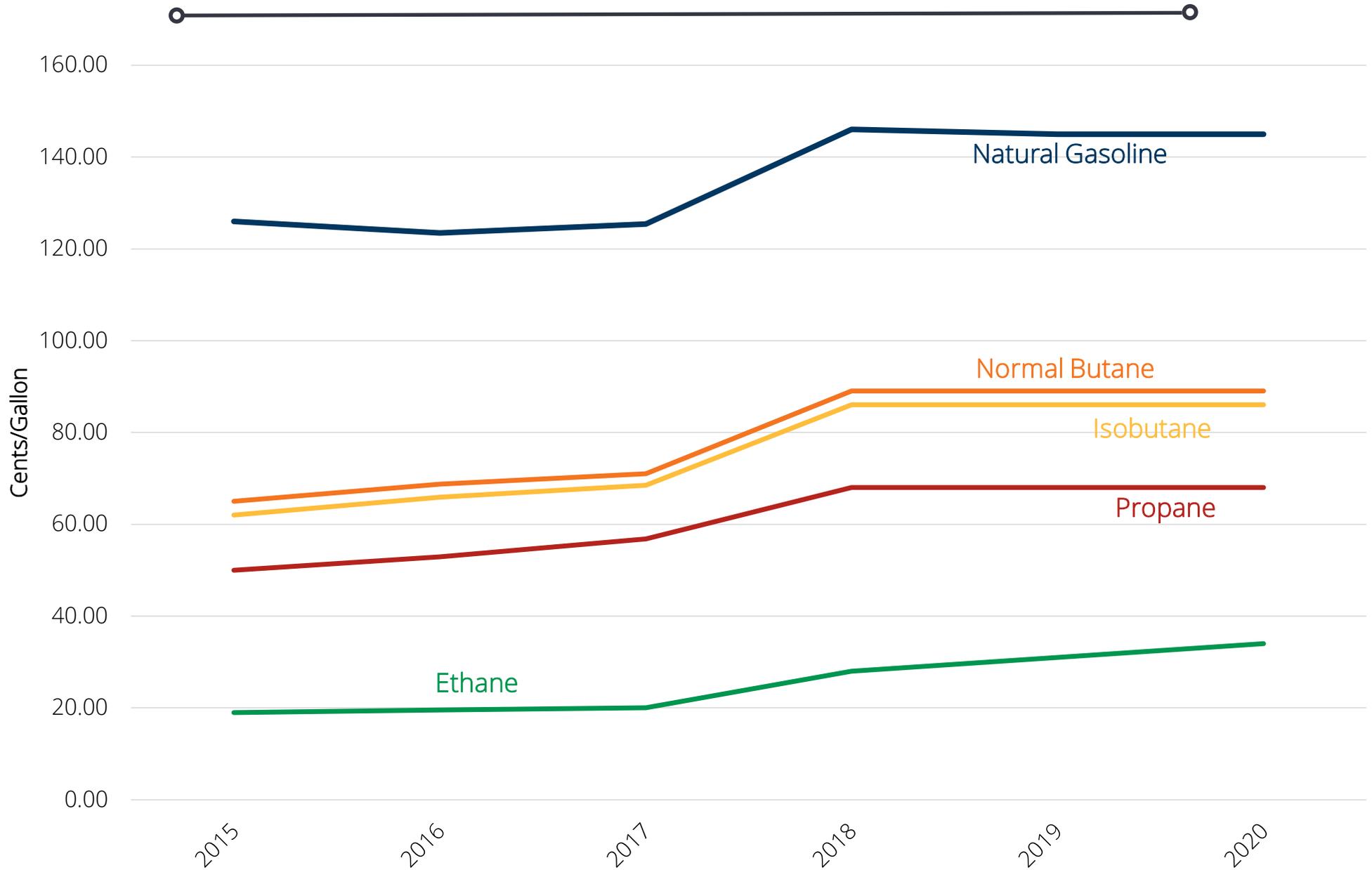
NGL Pipelines



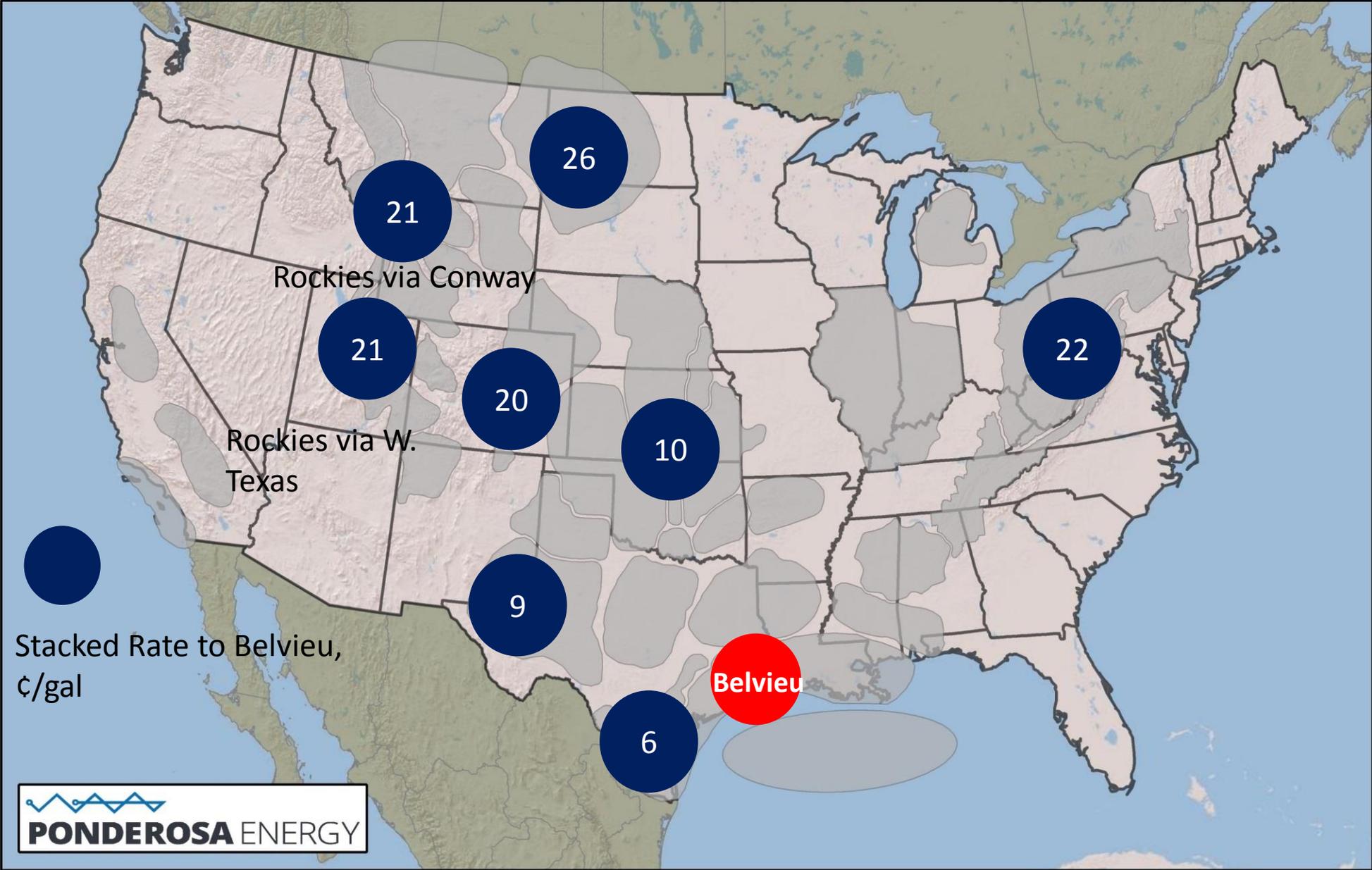
NGL Production



NGL Price Forecast

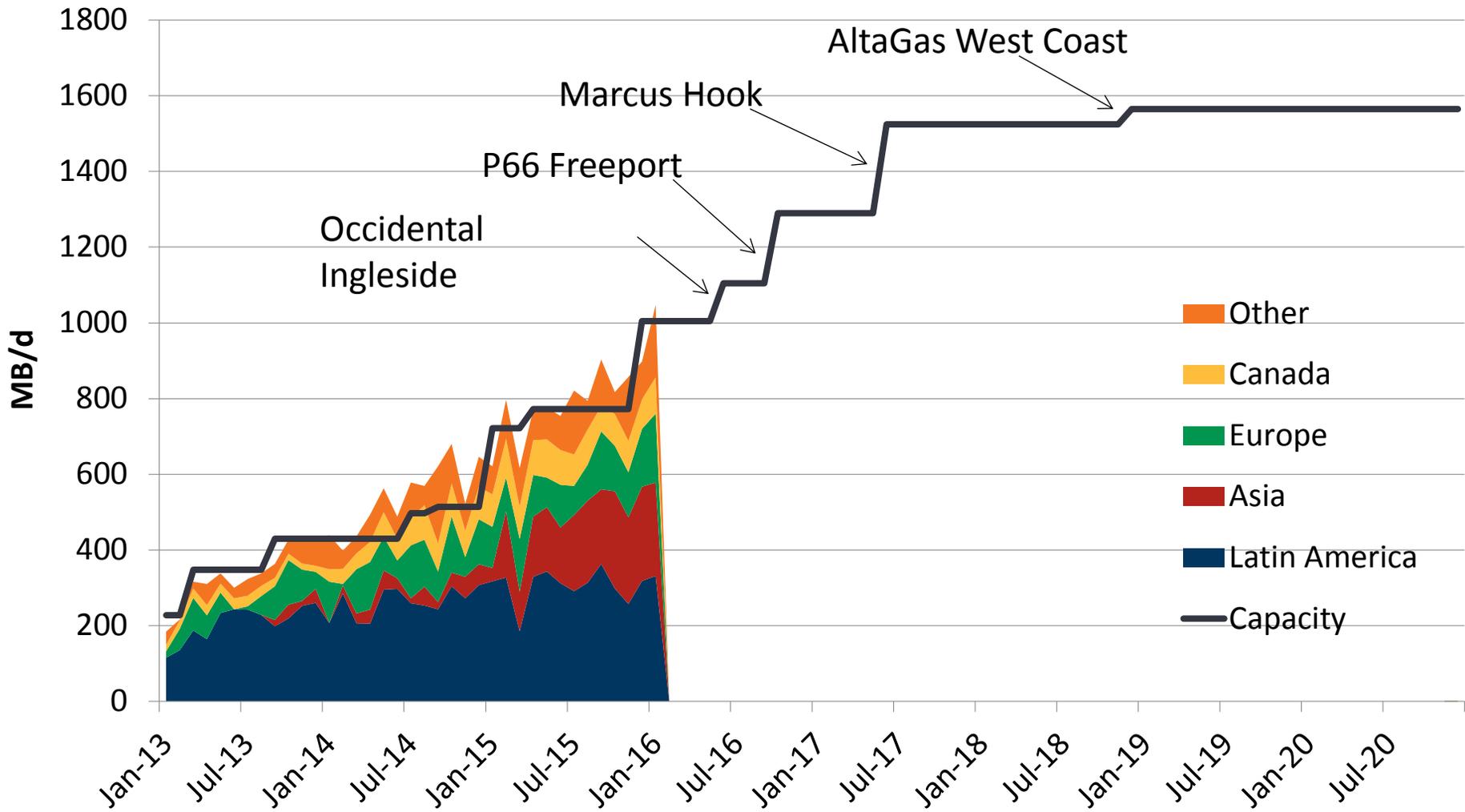


NGL Transportation Costs



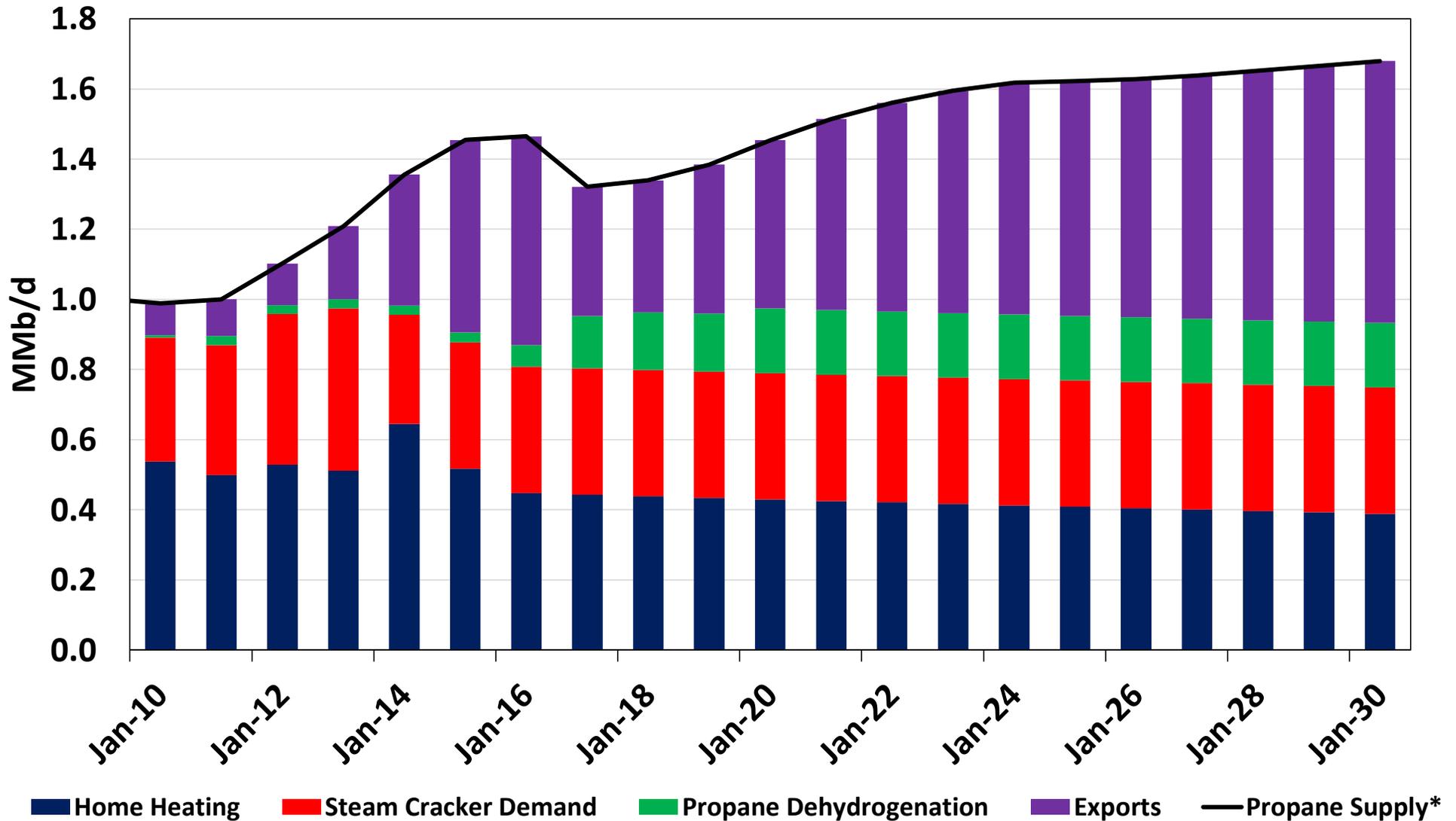
Exports - LPG

LPG Export Capacity



Exports - LPG

U.S. Propane Supply/Demand



Exports - Ethane

