



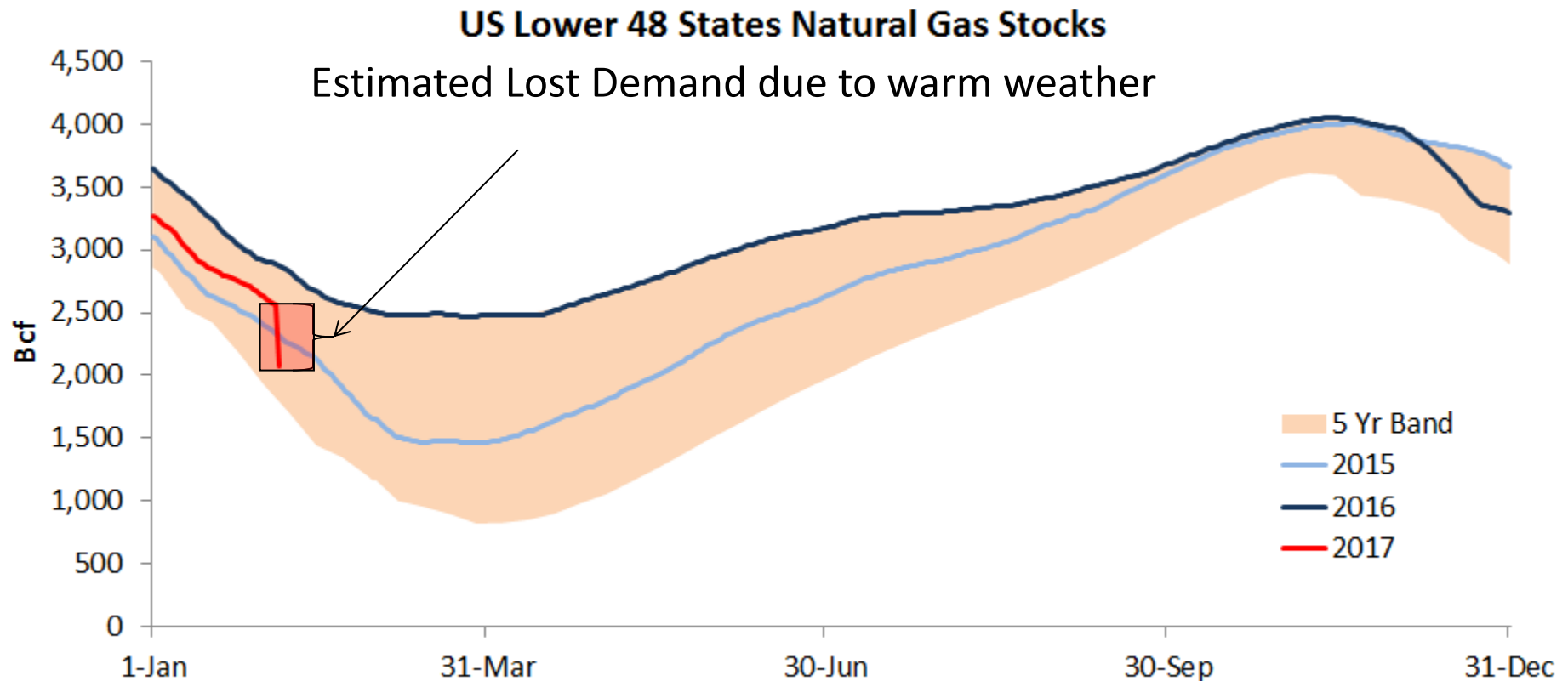
Risked Revenue
Energy Associates

Natural GAS: WHAT IS DRIVING PRICE IN 2017

WINTER 2017 NAPE

February 16, 2017

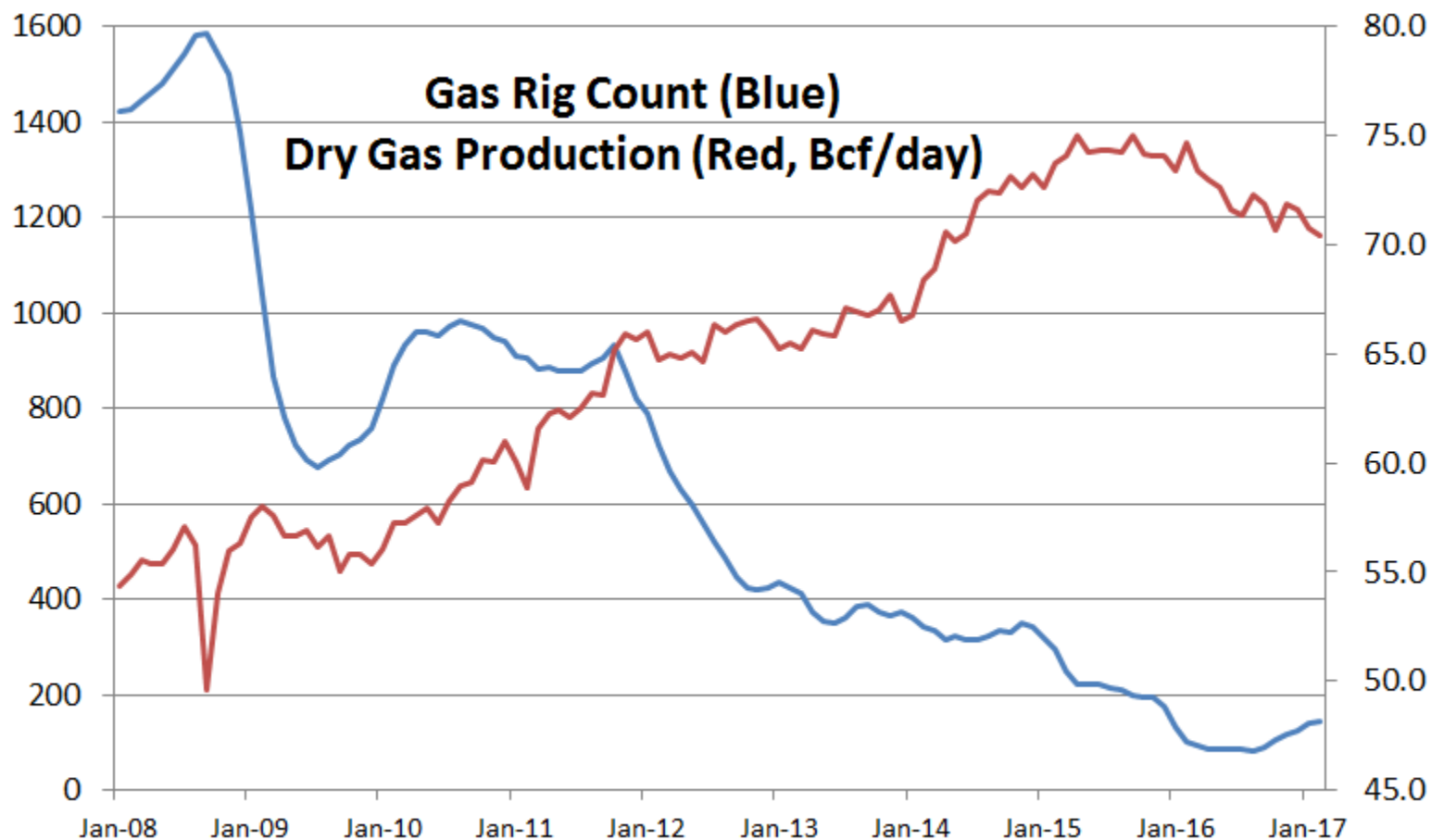
- NATURAL GAS
 - Fundamentals
 - Storage/Weather
 - Rig Counts/Production
 - Ethane Rejection
 - LNG/Exports
 - Pricing
 - Long Term View
 - Backwardation
 - Hedge Recommendations



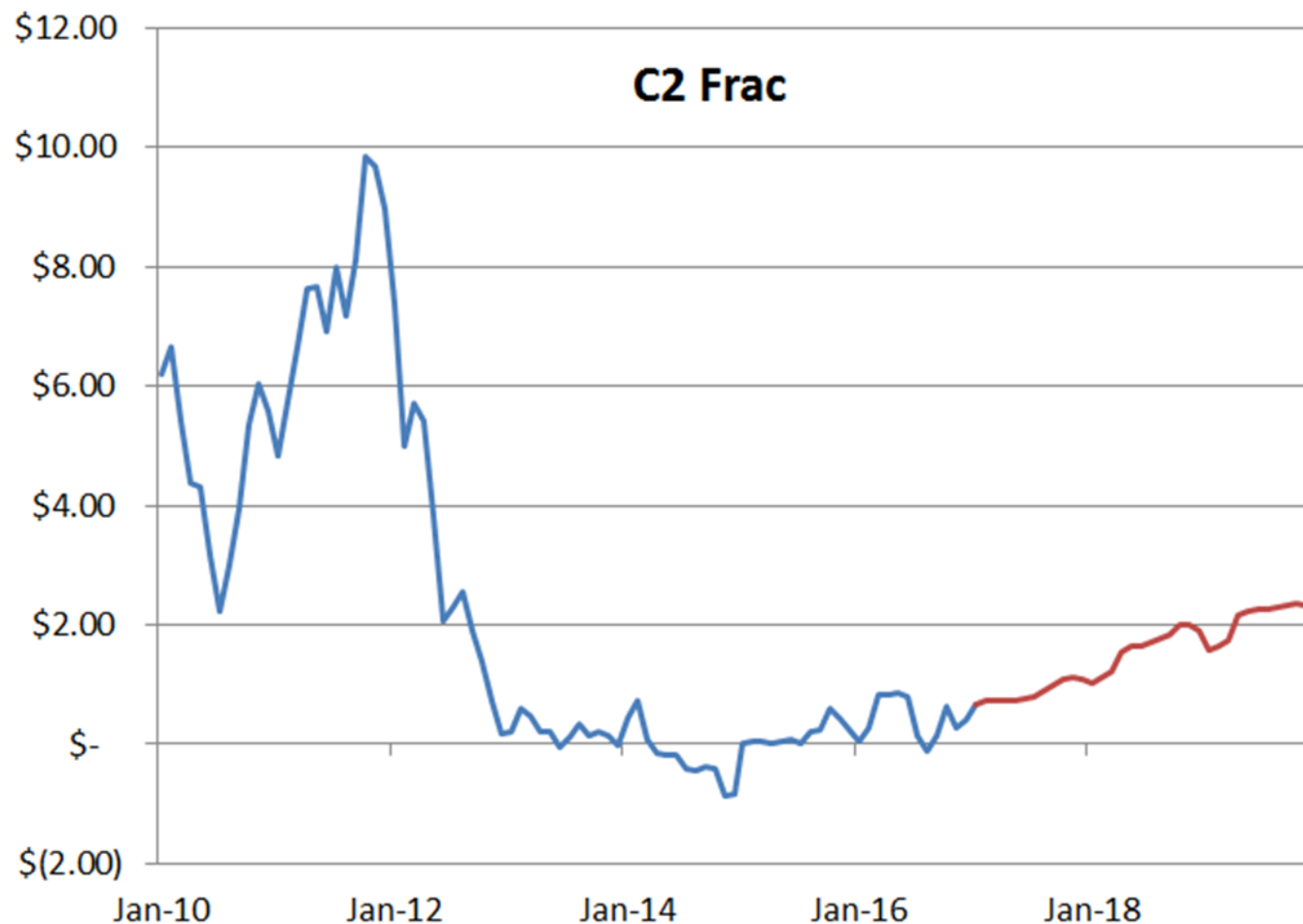
Source: EIA

- HDDs are -18% through January 2017
- Warmer winter weather has contributed to ~ 480 Bcf reduction in Residential/Commercial Demand through February 2017

Gas rig counts are +79% since August 2016, but remain 91% below the peak



- Gas production has dropped ~5 bcf/d from the peak, supporting a positive fundamental view on pricing
- Additional rigs are needed to offset depletion



- 650-700KBbl/d of C2 was rejected = 1.8 Bcf/d Natural Gas
- C2 Frac @ \$0.70/MMBtu ➡ 150KBbl/d no longer rejected
- 500KBbls C2 still being rejected ➡ 1.5 Bcf less Gas supply

EIA PROJECTIONS (Bcf/day)				
	2015	2016	2017	2018
Price		2.51	3.55	3.73
Consumption		75.1	75.4	76.9
Production	74.2	72.4	73.8	76.6
Pipe Exports	4.9	5.9	6	6.4
LNG Exports	0	0.5	1.4	2.6
Total Exports	4.9	6.4	7.4	9
Imports		8.1	8.1	8.4
Net Imports		1.7	0.7	-0.6
Consumption + Exports		81.5	82.8	85.9
Production + Imports		80.5	81.9	85

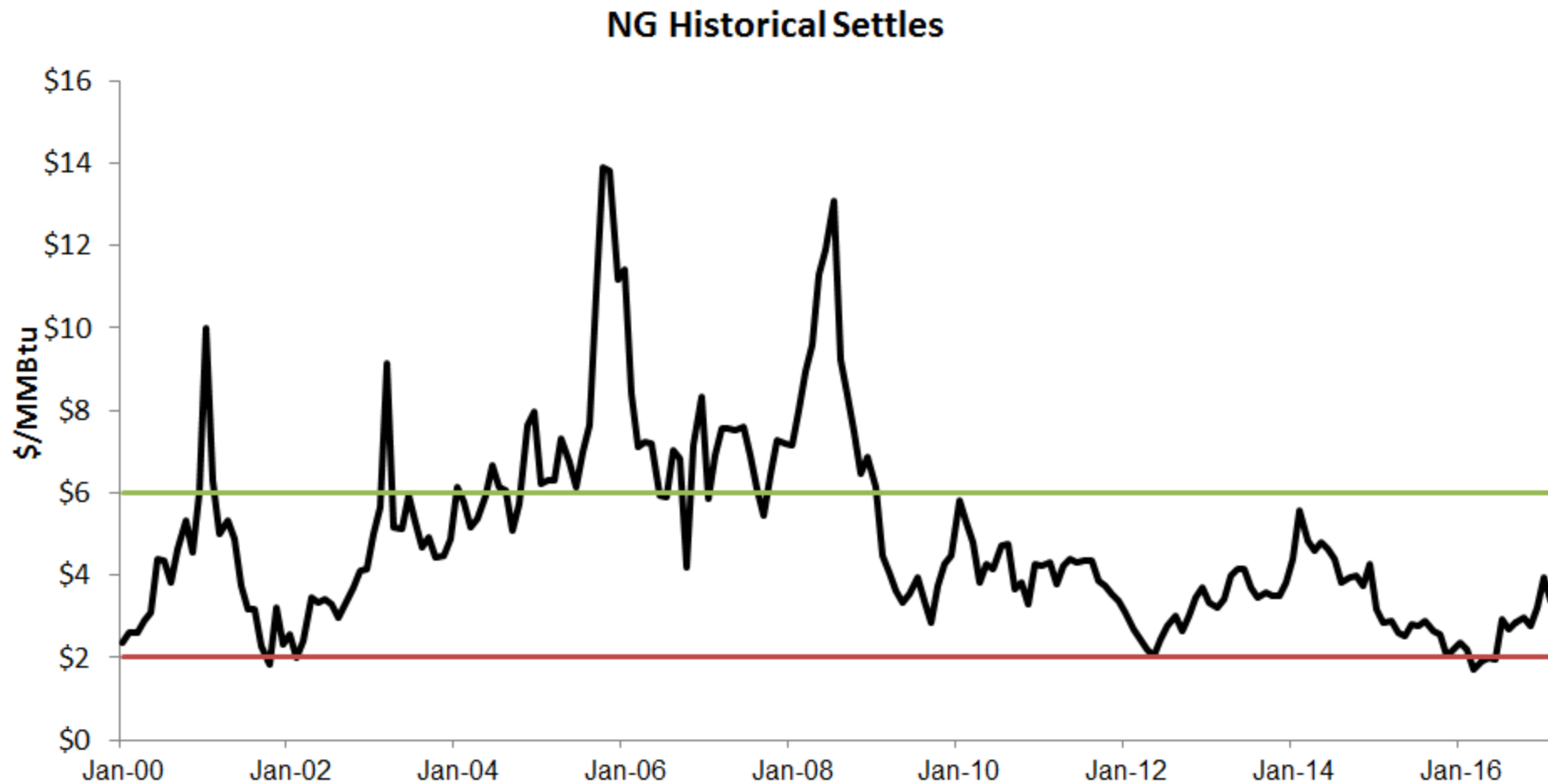
Conservative
Export estimates

Prices are lower
Higher prices are
needed

Production is ~70
Bcf/day, more Gas
is needed

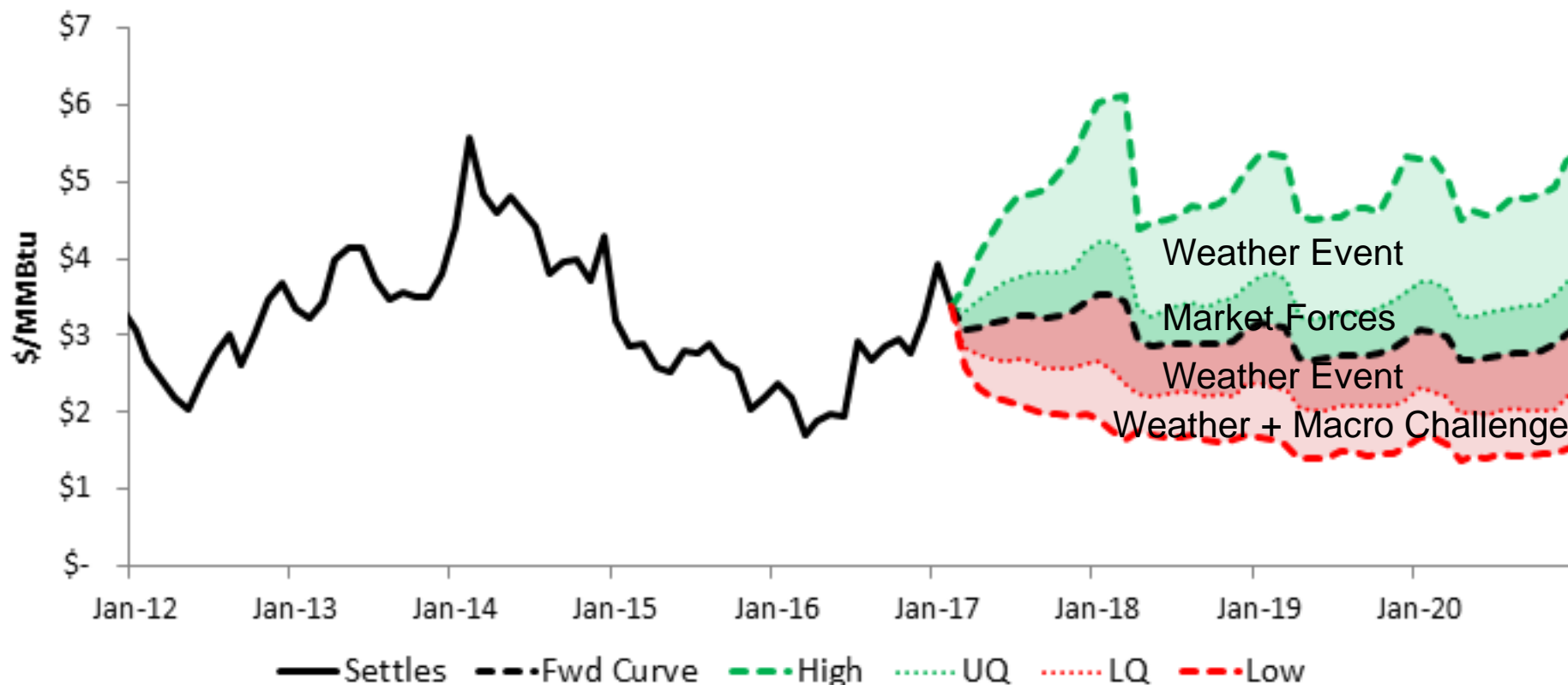
Consumption + Exports > Production + Imports, implies solid fundamentals.
Warmer than normal weather has lowered prices, for now.

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Gas is bounded by \$2.00 - \$6.00. All else equal, hedging with swaps below \$3.00 is not as attractive as collars

NG Historical Settles and Fwd Curve with Risk Bands



NG	2016	2017 YTD	Feb-2017	Bal 2017	2018	2019
High				\$4.74	\$5.02	\$4.86
UQ				\$3.72	\$3.59	\$3.44
Settles/Fwd Curve	\$2.460	\$3.661	\$3.391	\$3.23	\$3.06	\$2.86
LQ				\$2.67	\$2.32	\$2.15
Low				\$2.13	\$1.70	\$1.51

We think Cal 19 below \$3 is not reflective of gas fundamentals

Risk Driven Hedges

Low case estimates fell this month. Adding hedges to lift Low Case estimates to levels reported last month is recommended. Further, borrowing base redeterminations are approaching. If risked estimates or the expected borrowing base are below targeted levels, hedging is recommended.

<i>WTI Swap and Collar Prices (1/31/2017)</i>	Bal 2017	2018	2019
Fixed Swap	\$54.65	\$55.43	\$55.42
Crude Percent Hedged Increase from 1K Bbl/d Swap	8%	8%	8%
Risk Reduction (Low Case lift) from 1K Bbl/d Swap	\$5 MM	\$9 MM	\$10 MM
Costless Collar Indication	\$49 x \$59	\$50 x \$60	\$50 x \$60

<i>Henry Hub Swap and Collar Prices (1/31/2017)</i>	Bal 2017	2018	2019
Fixed Swap	\$3.28	\$3.07	\$2.86
Gas Percent Hedged Increase from 10K MMBtu/d Swap	6%	6%	6%
Risk Reduction (Low Case lift) from 10K MMBtu/d Swap	\$3 MM	\$5 MM	\$5 MM
Costless Collar Indication	\$2.75 x \$4.09	\$2.50 x \$4.07	\$2.40 x \$3.66

Market Driven Hedges

R² continues to advise opportunistic WTI hedge targets of \$55 - \$57 for Bal 2017 & Cal 2018.

Producers should target hedging NYMEX natural gas above \$3.25 in Bal 2017 and Cal 2018.

Crude Oil (Separate presentation)

- Non/OPEC cuts are supportive, but built into pricing by...
- Record Net Speculation is capping the market
- US Shale production/productivity growth will take away share
- 2018 Saudi Aramco IPO shapes timing
- Rangebound annual swaps \$40-\$60

Natural Gas

- Fundamentals have turned, as cheap pricing is spurring...
 - More LNG & Exports to Mexico
 - Reduced Incentive for Production
 - Reduced Supply from Ethane Rejection
- Hedge for Upside Participation with (Economic) Collars in 2018+

Please contact us to learn how R² analytics can help you grow.

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For additional information about the services we offer, our team and projects we have completed, please visit our website

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