

The Future of the Energy Industry (And its possible impact on the Piceance Basin)

**Western Colorado Economic Summit
Grand Junction, CO**

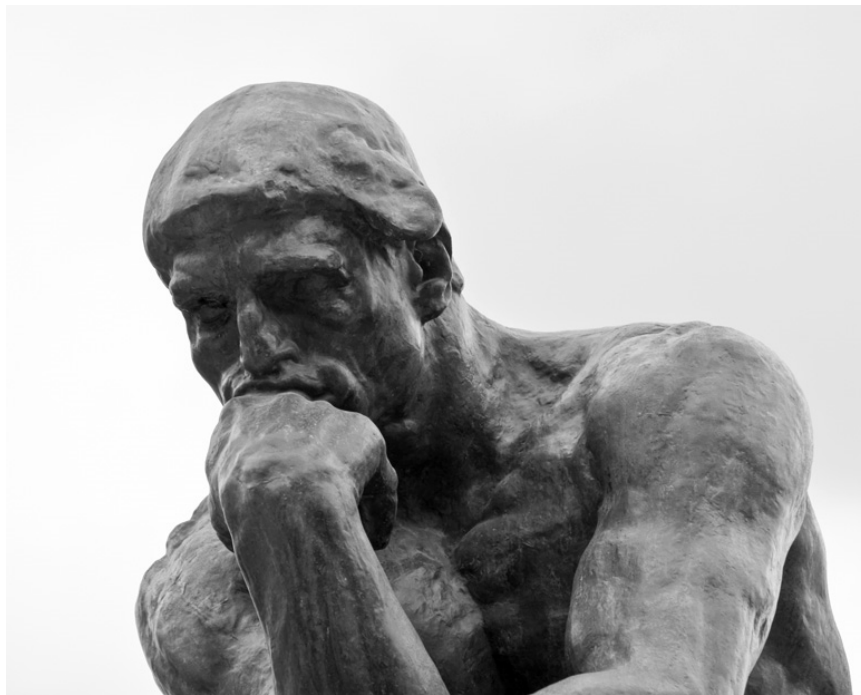
By:
John Harpole



June 1, 2016

The Big Question

- What issues will have the greatest impact on North American natural gas prices in the next 5 years?

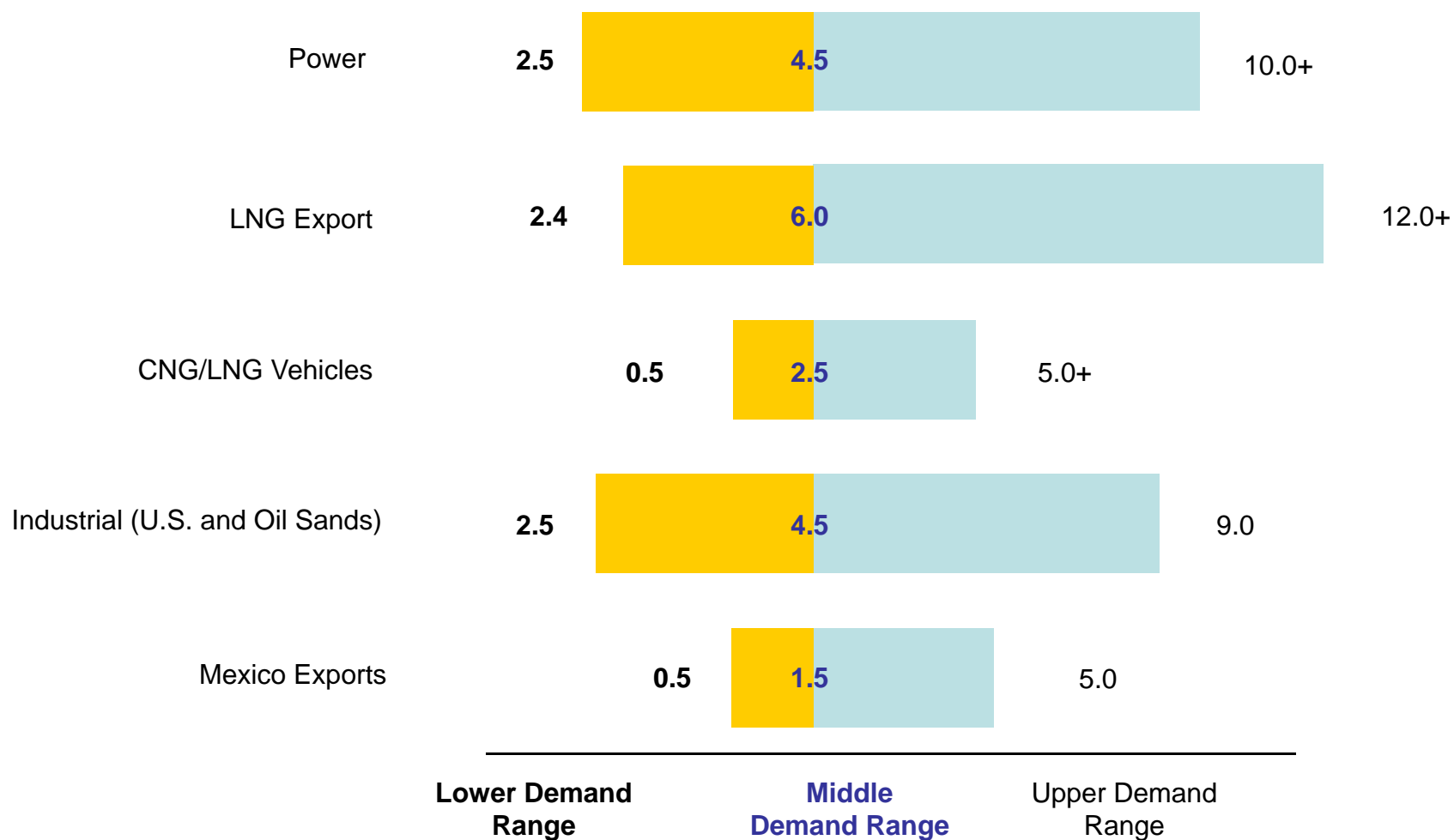


The Big Five Issues to Watch

1. Global Oil Price Recovery
2. Marcellus and Utica Shale Production
3. Industrial Demand
4. Exports to Mexico
5. U.S. LNG Exports

North American Natural Gas Demand Ranges by Selected Sector

Significant demand growth is possible in the LNG, transportation/HHP and power sectors through 2020 in Bcf per day.



Source: Encana Corporate Presentation, August 2013; Industrial Energy Consumers of America; Bentek Energy; Raymond James; Michael Smith, Chairman & CEO Freeport LNG, Industry Sources

The Big Five Issues to Watch

1. Global Oil Price Recovery

What Happened? A Global Perspective

- US oil supply rose
- Unexpected large supply growth out of Iraq
- Surging oil supply from Saudi Arabia
- Possible removal of EU sanctions on Iran

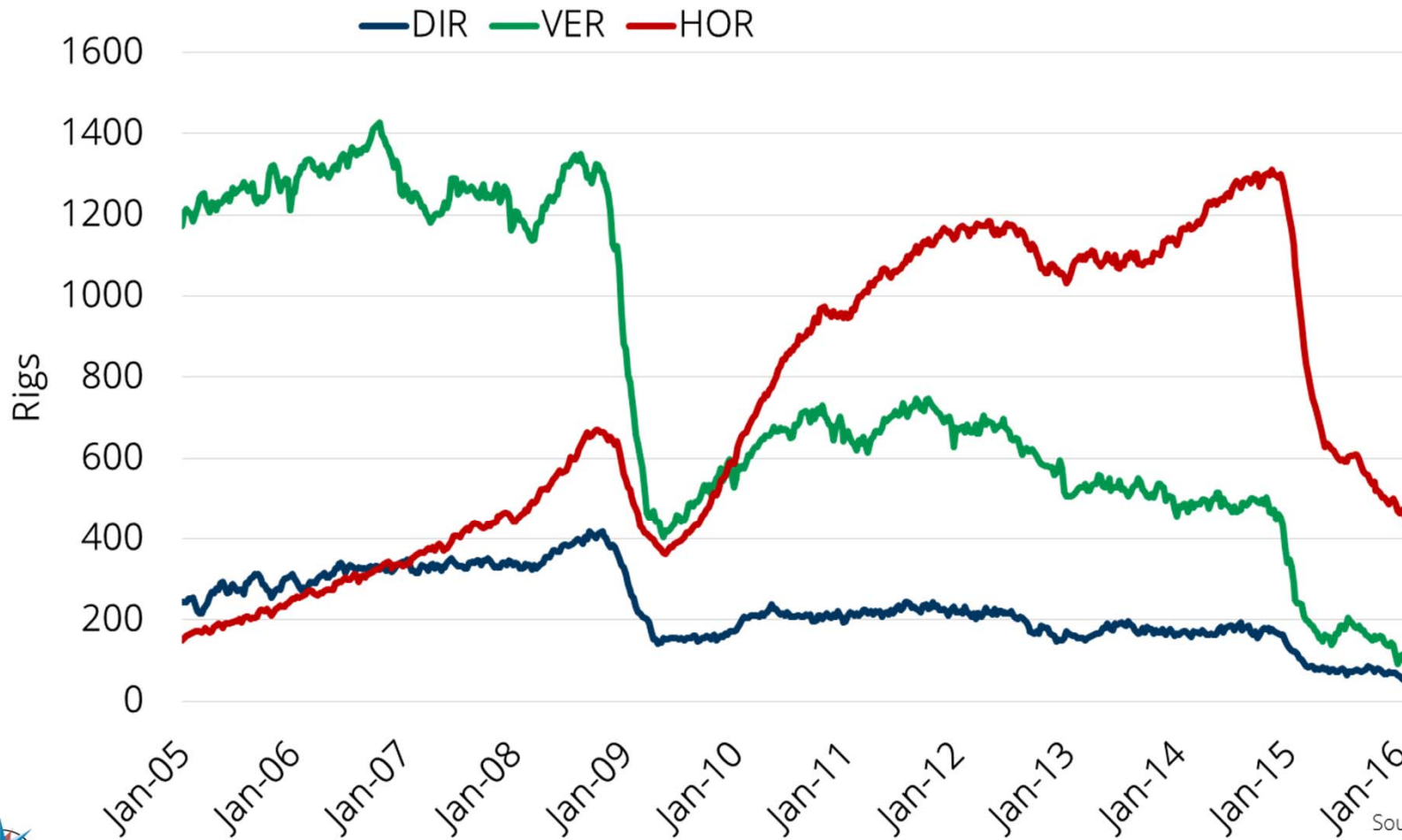
What Happened?

A U.S. Perspective

- Thanks to hydraulic fracturing, horizontal drilling and private property ownership of minerals, the world should no longer live under the threat of energy insecurity.
- Energy once scarce, is now super-abundant and that reality will continue to change the world as transportation issues are remedied.

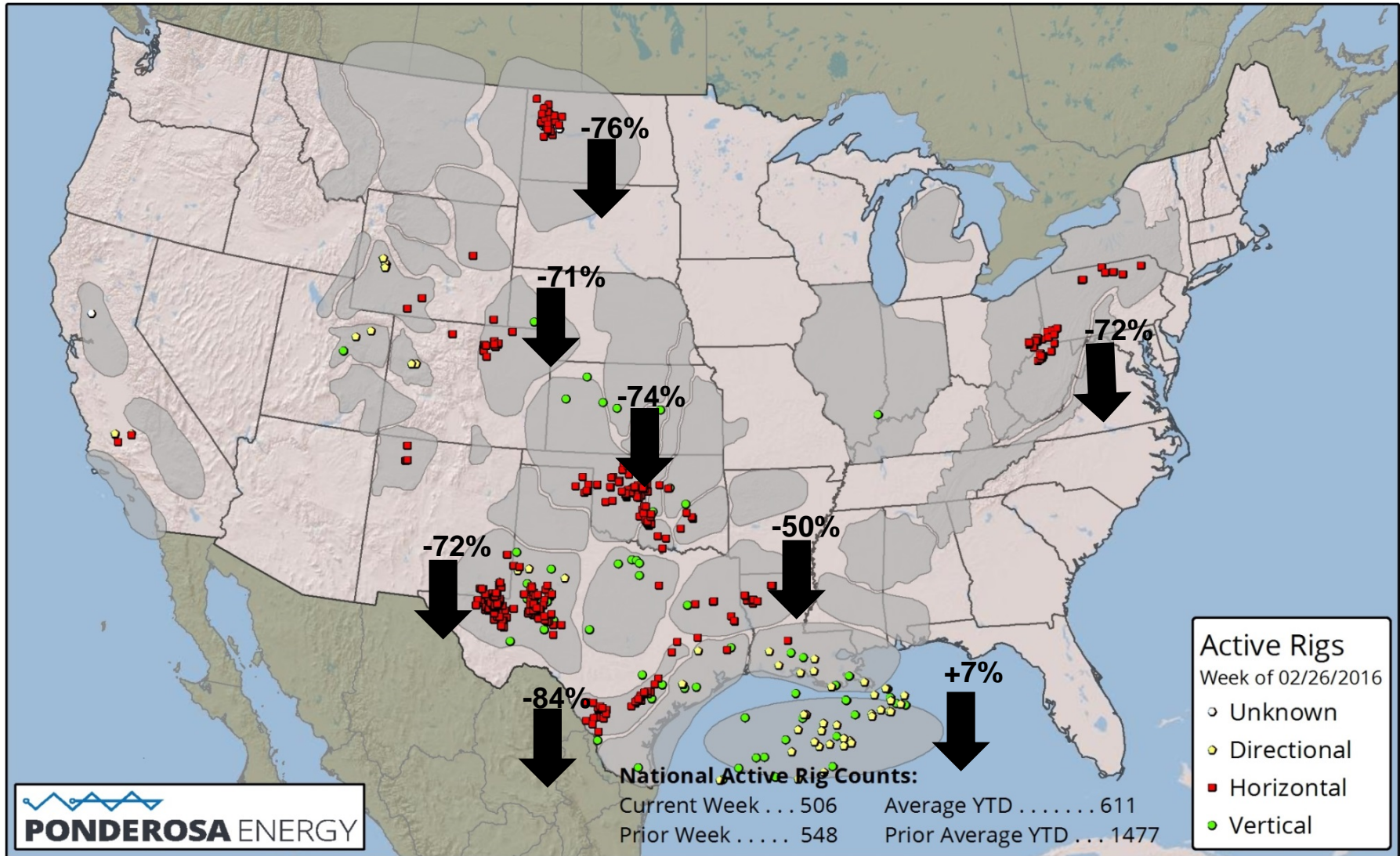
The Active Rig Count Is Down 75%

Active Rig Count By Orientation Of Drilling



Source: Rigdata

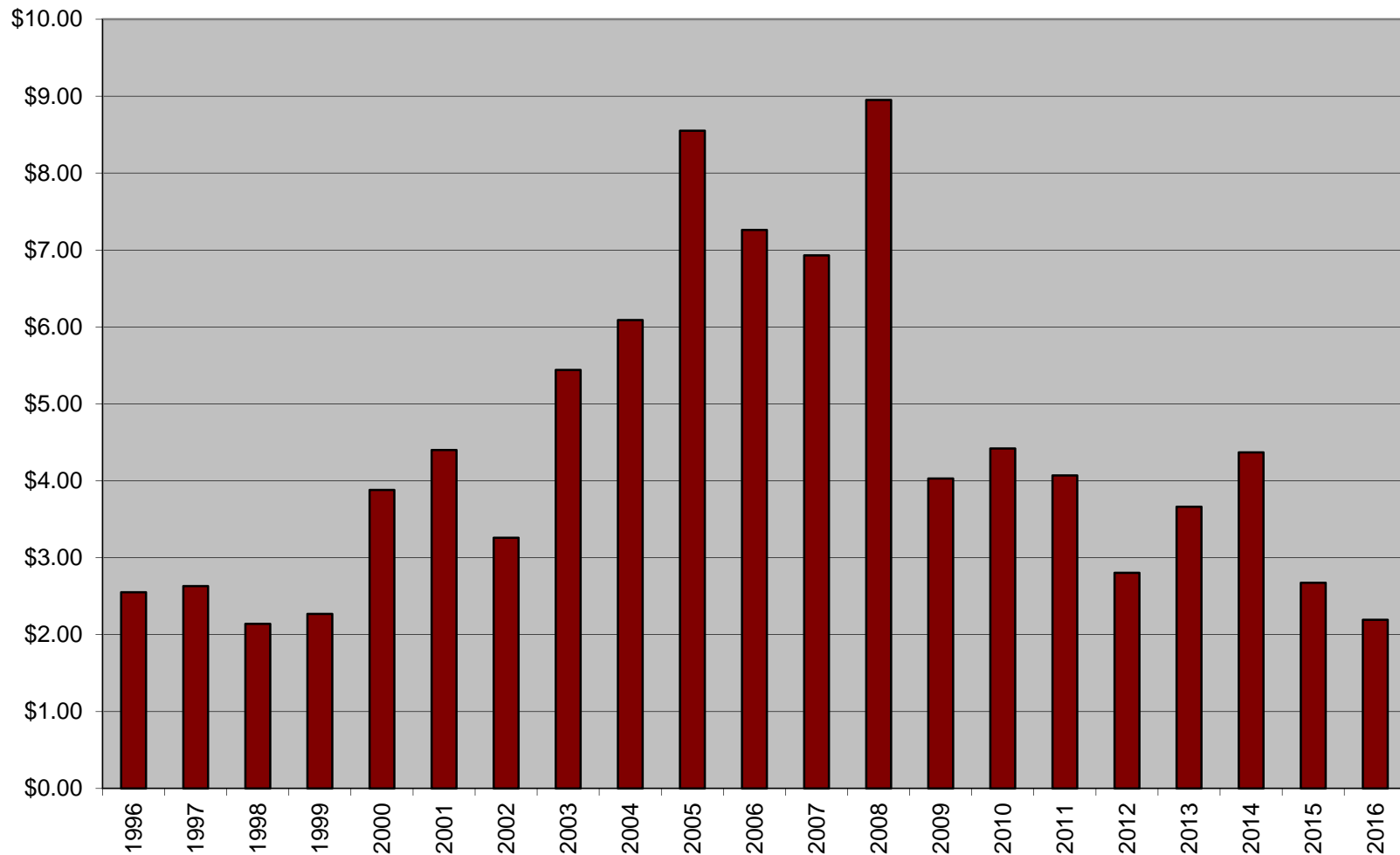
U.S. Active Rig Count Off 75% vs. Recent Peak in October 2014...but Offshore Activity is Up



Source: RigData

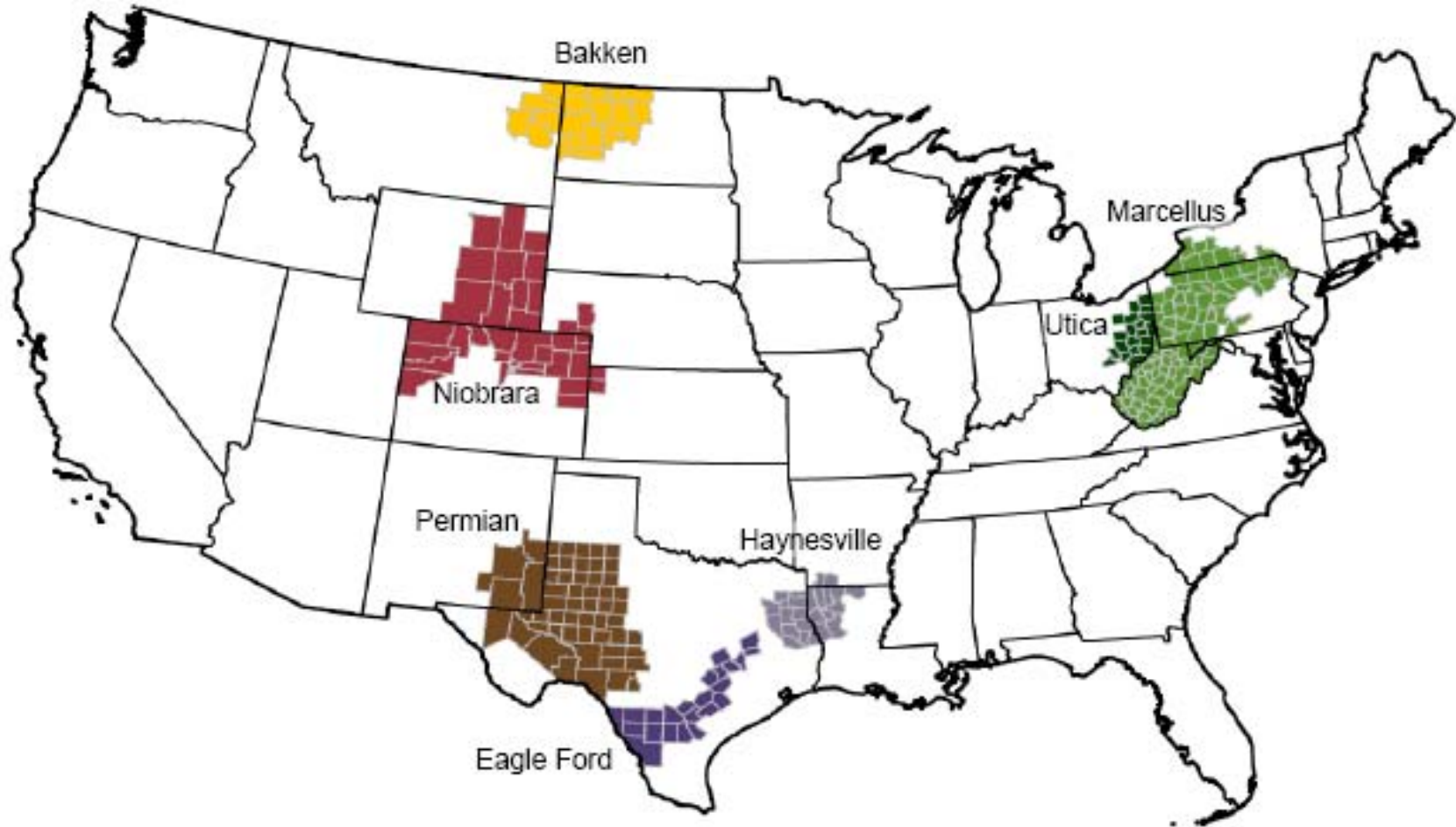
Despite a price drop

Historical NYMEX Henry Hub Index Prices (1996-Current)



Source: NYMEX – Average last 3 days of close as reported in Platts Gas Daily Report, A McGraw Hill Publication

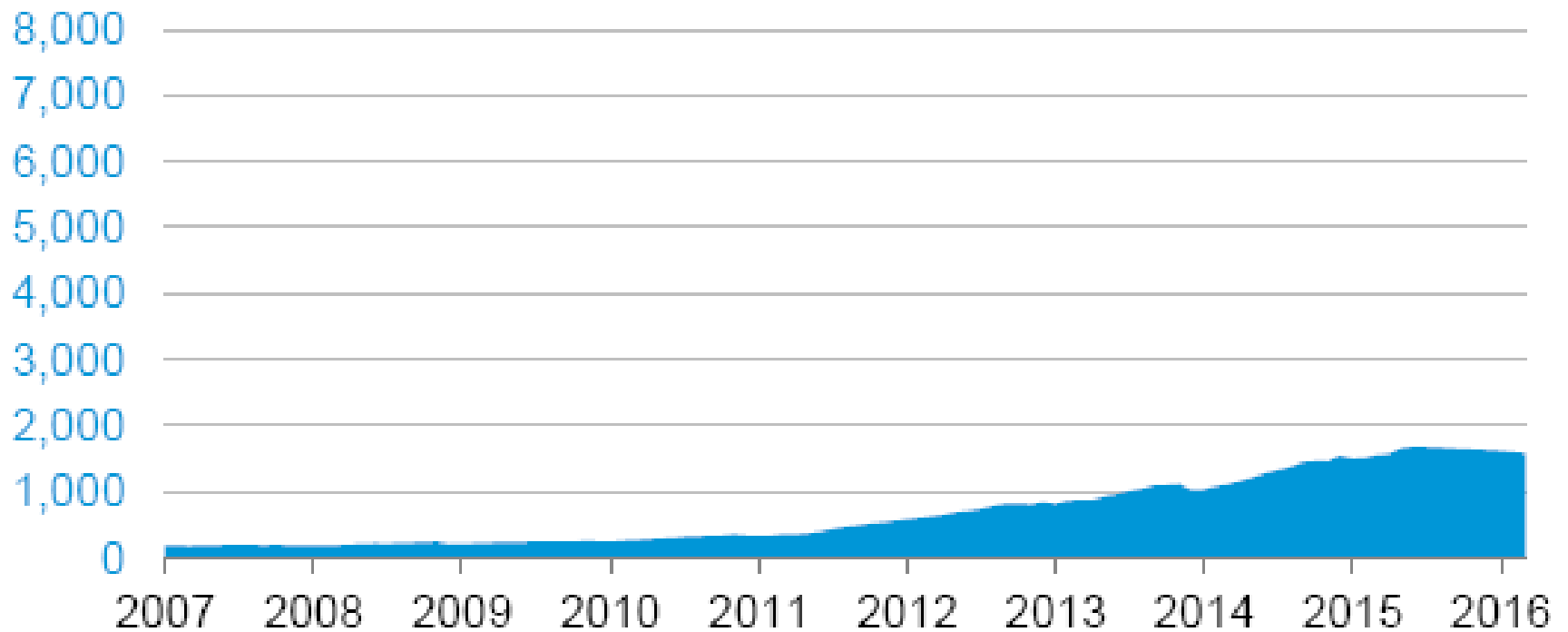
The seven regions shown below account for 92% of domestic oil production growth and all domestic natural gas production growth during 2011-14.



Bakken Region Natural gas production

million cubic feet/day

Gas -24
million cubic feet/day
month over month

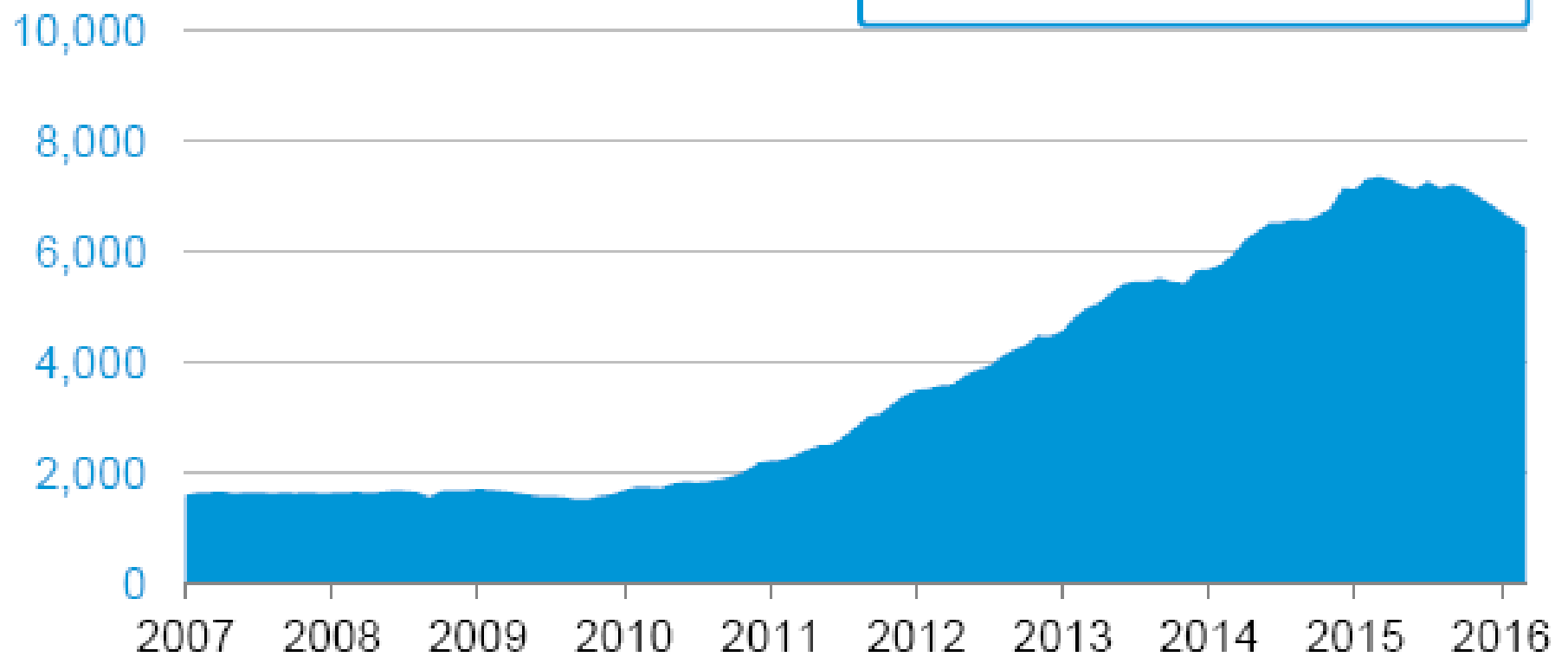


Source: Drilling Productivity Report, EIA U.S. Energy Information Administration, February 2016

Eagle Ford Region Natural gas production

million cubic feet/day

Gas -158
million cubic feet/day
month over month

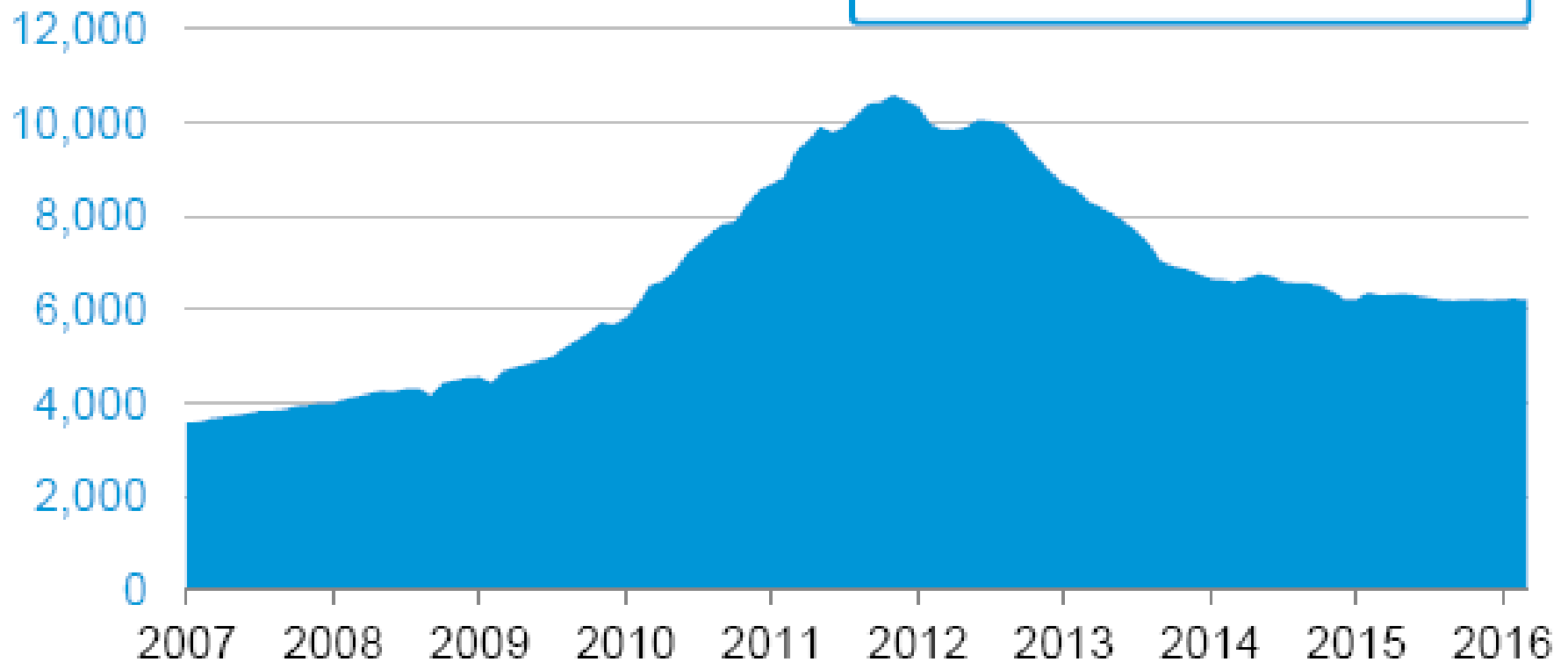


Source: Drilling Productivity Report, EIA U.S. Energy Information Administration, February 2016

Haynesville Region Natural gas production

million cubic feet/day

Gas -23
million cubic feet/day
month over month

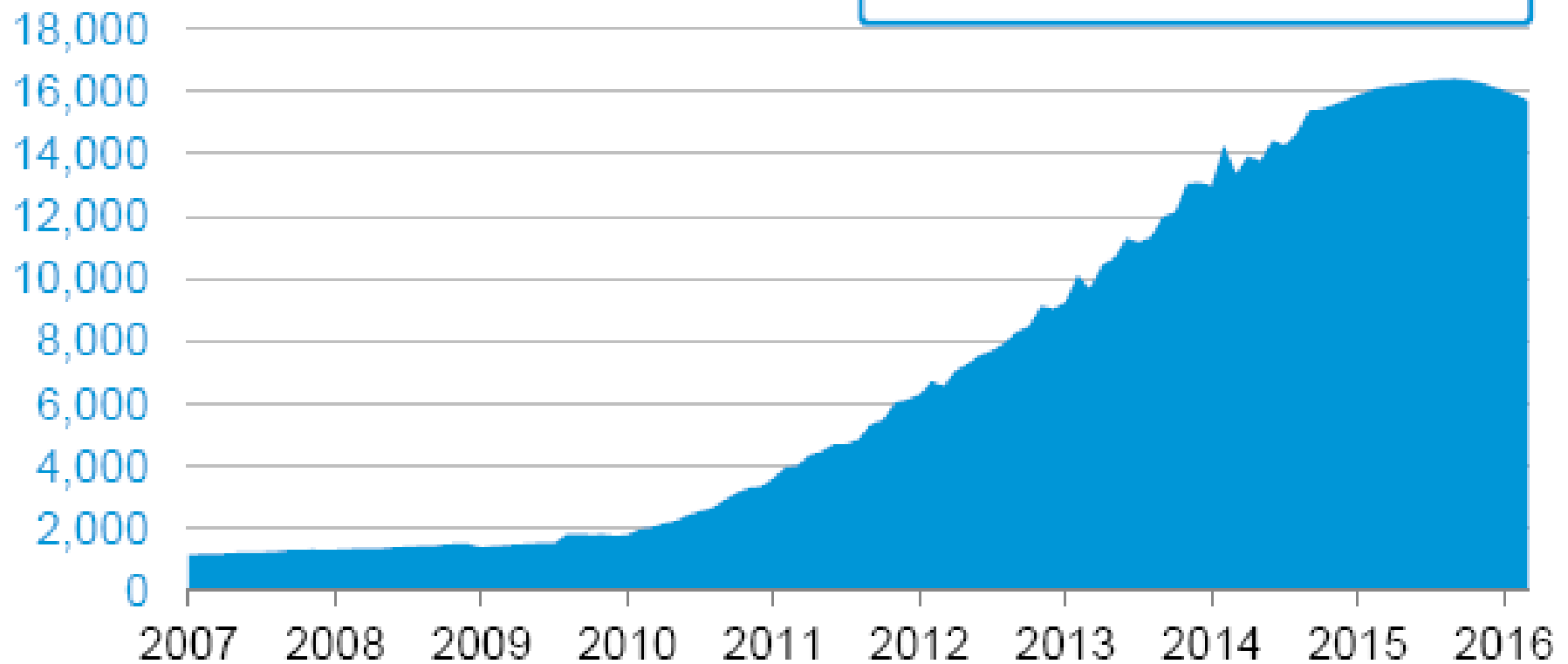


Source: Drilling Productivity Report, EIA U.S. Energy Information Administration, February 2016

Marcellus Region Natural gas production

million cubic feet/day

Gas -202
million cubic feet/day
month over month

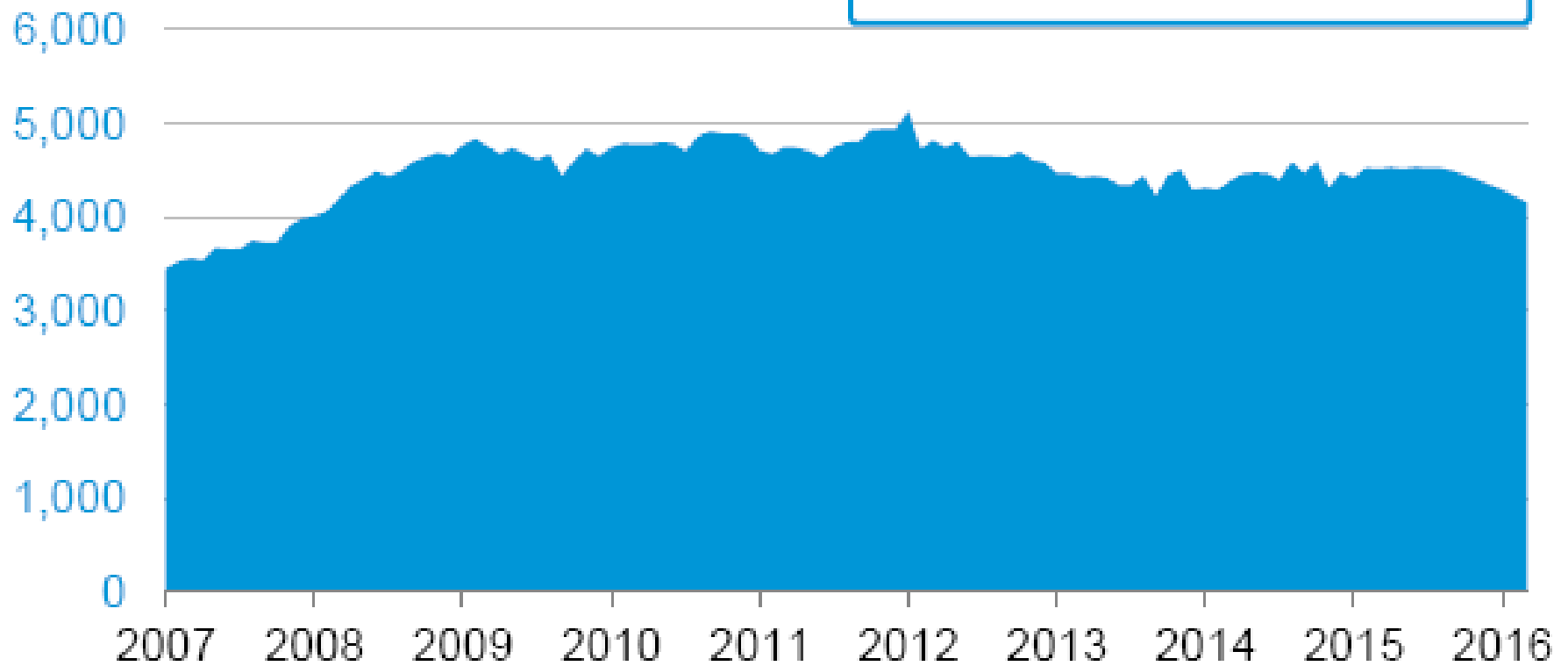


Source: Drilling Productivity Report, EIA U.S. Energy Information Administration, February 2016

Niobrara Region Natural gas production

million cubic feet/day

Gas -70
million cubic feet/day
month over month

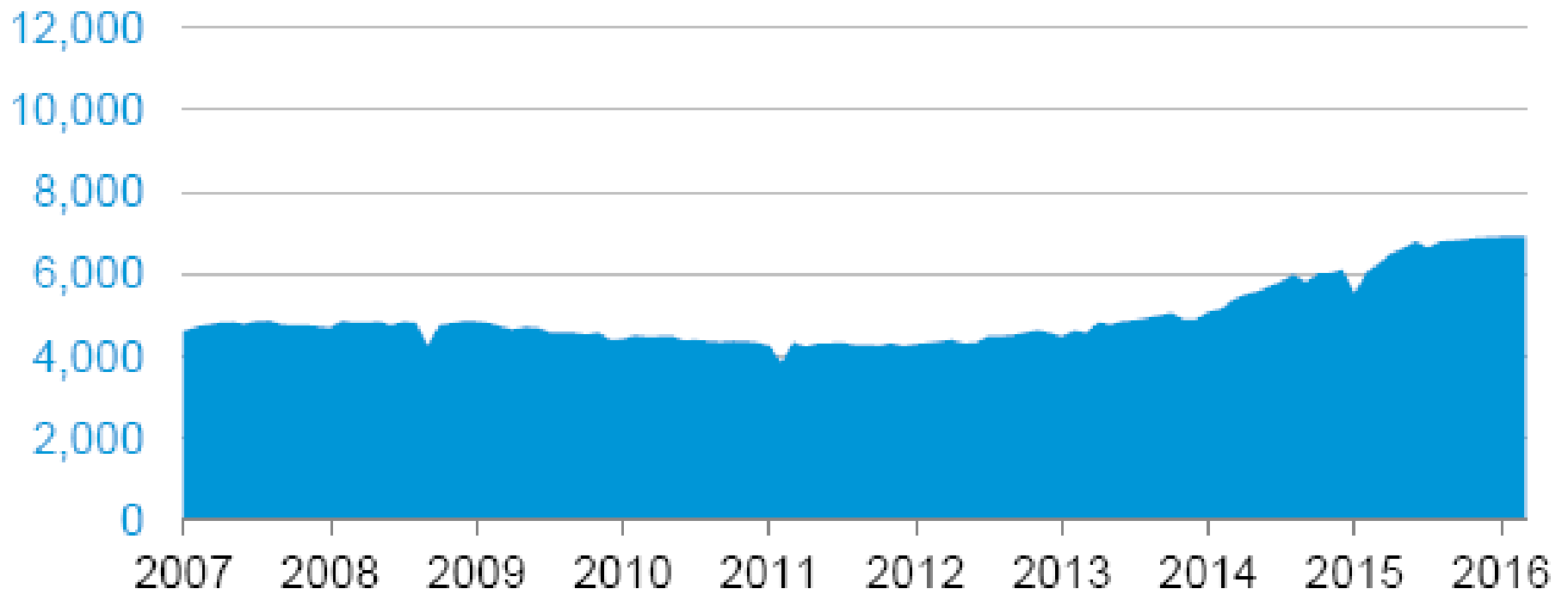


Source: Drilling Productivity Report, EIA U.S. Energy Information Administration, February 2016

Permian Region Natural gas production

million cubic feet/day

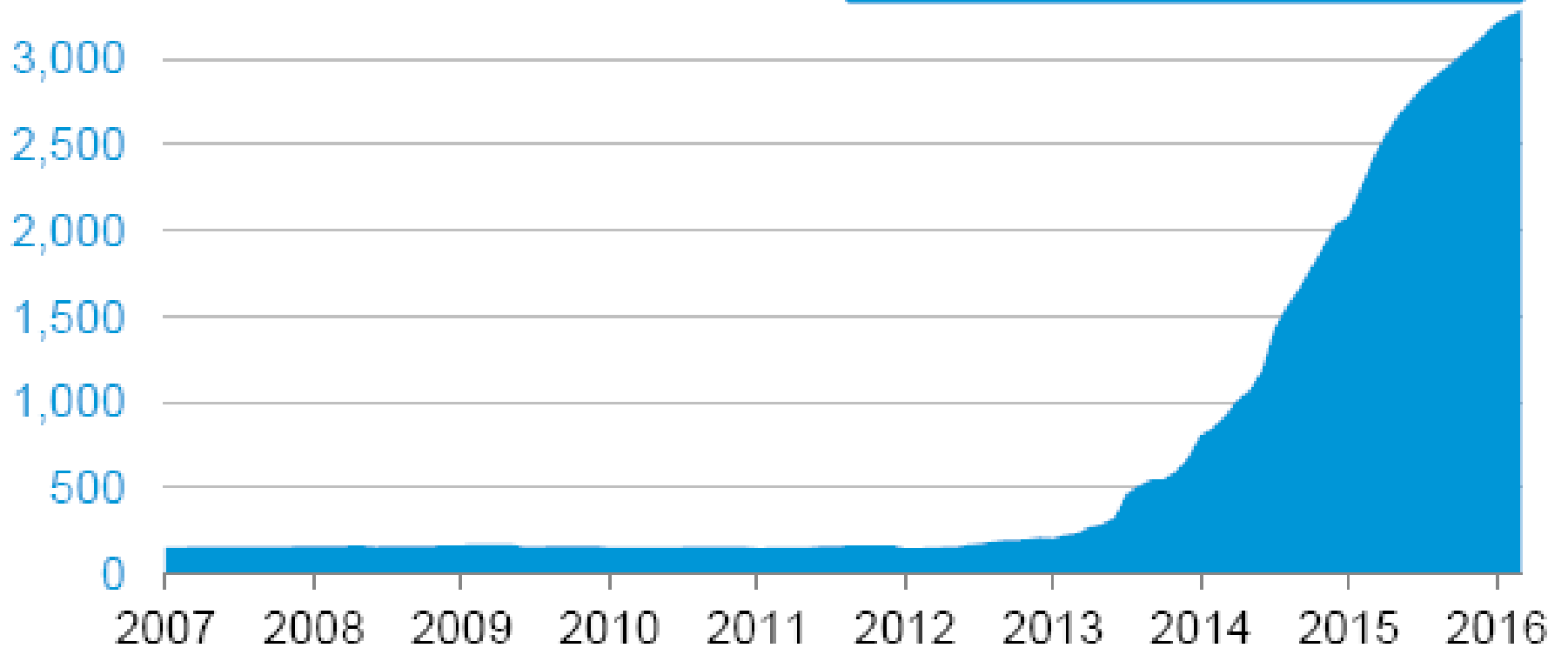
Gas -6
million cubic feet/day
month over month



Source: Drilling Productivity Report, EIA U.S. Energy Information Administration, February 2016

Utica Region
Natural gas production
million cubic feet/day

Gas +32
million cubic feet/day
month over month



Source: Drilling Productivity Report, EIA U.S. Energy Information Administration, February 2016

Is There Hope?

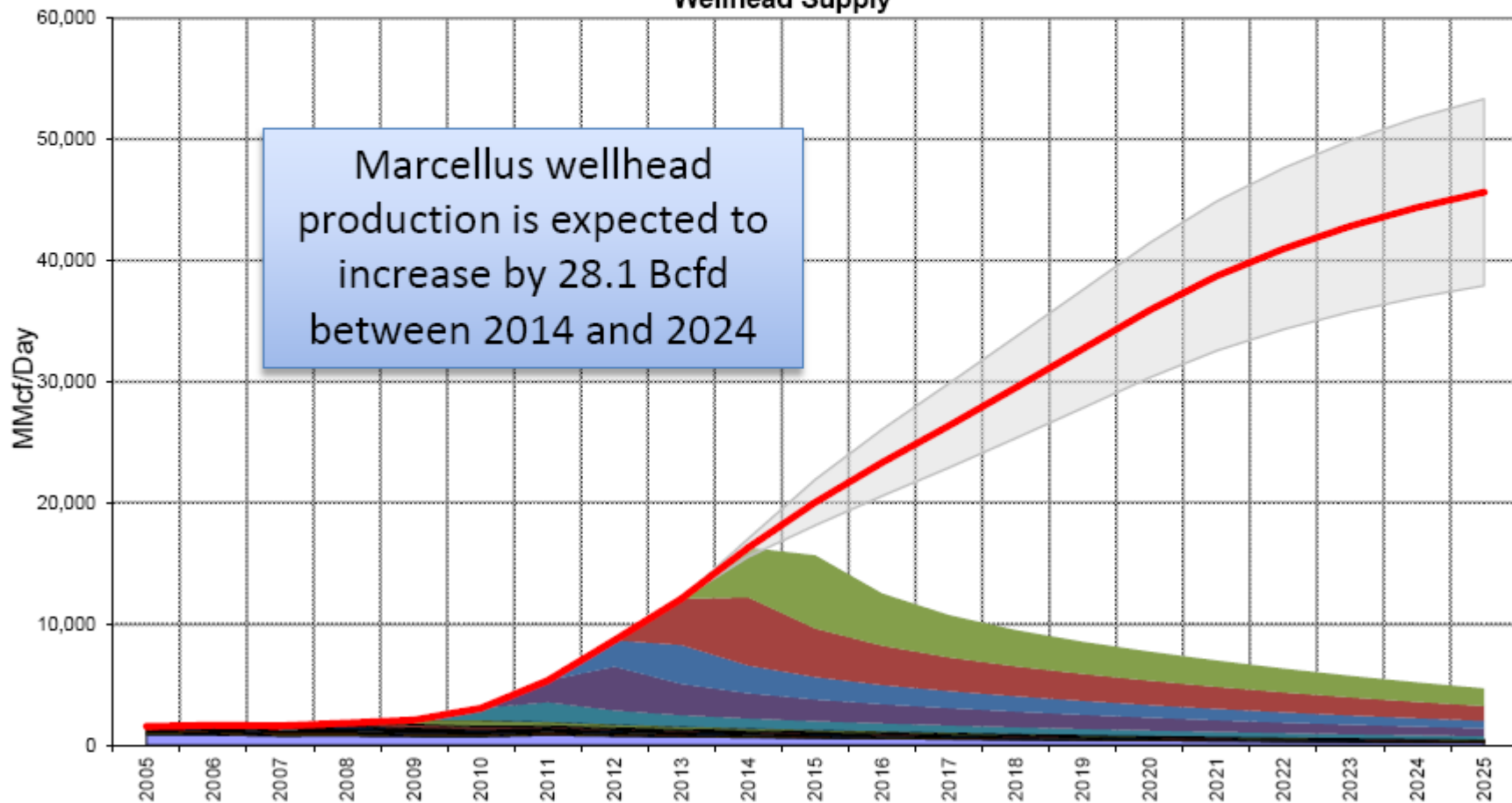
- Despite headwinds production volumes were tenacious for 18 months
- Volumes are starting to rollover.
- They have held in there but now they are down nearly half a BCF per day in the top 7 producing basins.

The Big Five Issues to Watch

2. Marcellus and Utica Shale Production

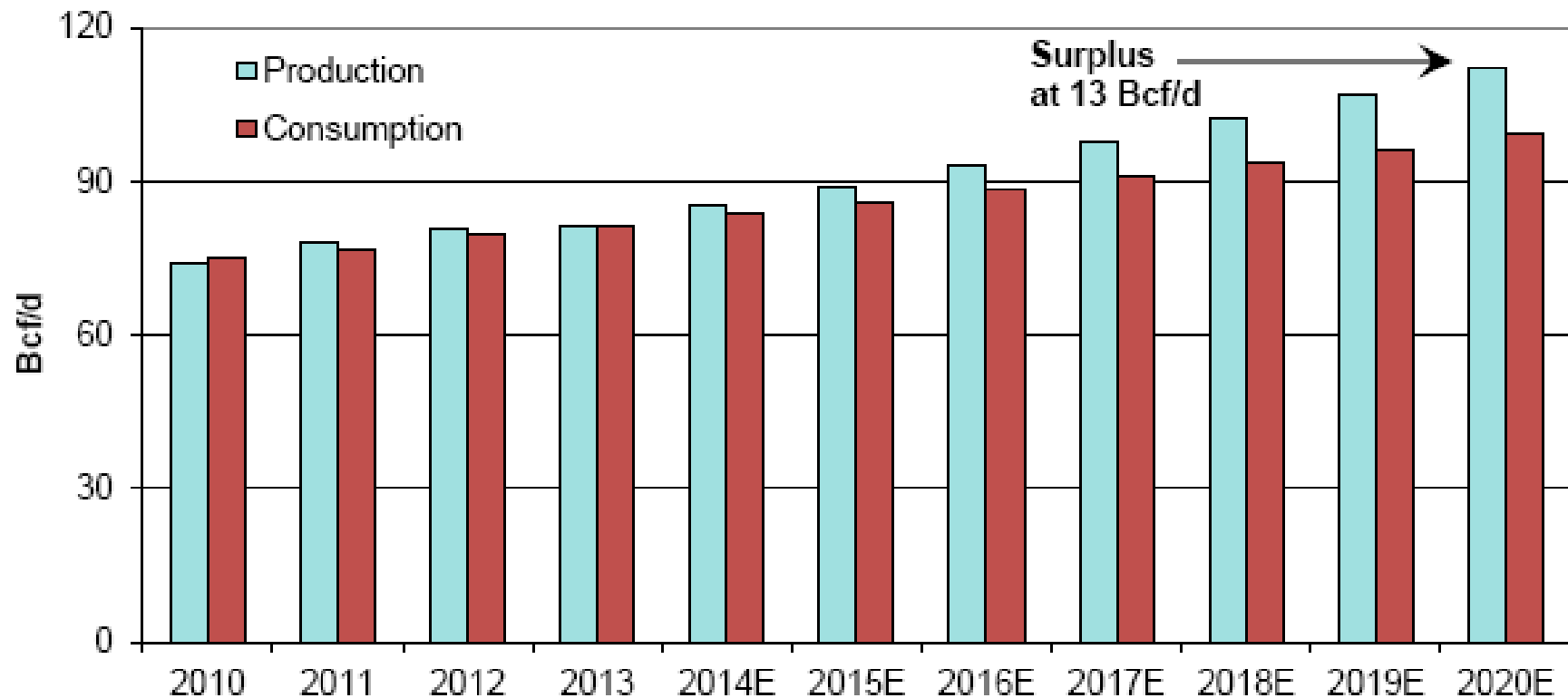
Marcellus

Marcellus/Utica Area Wellhead Supply



1990-2013: Wellhead total data from DI Desktop
2014-2025: Kinder Morgan forecast

U.S. and Canada: Natural Gas Production vs. Consumption



Source: BP Statistical Review, Raymond James research

The Big Five Issues to Watch

3. Industrial Demand

Additional 20,950+ MMlbs/yr. Ethylene Capacity Planned or Under Construction

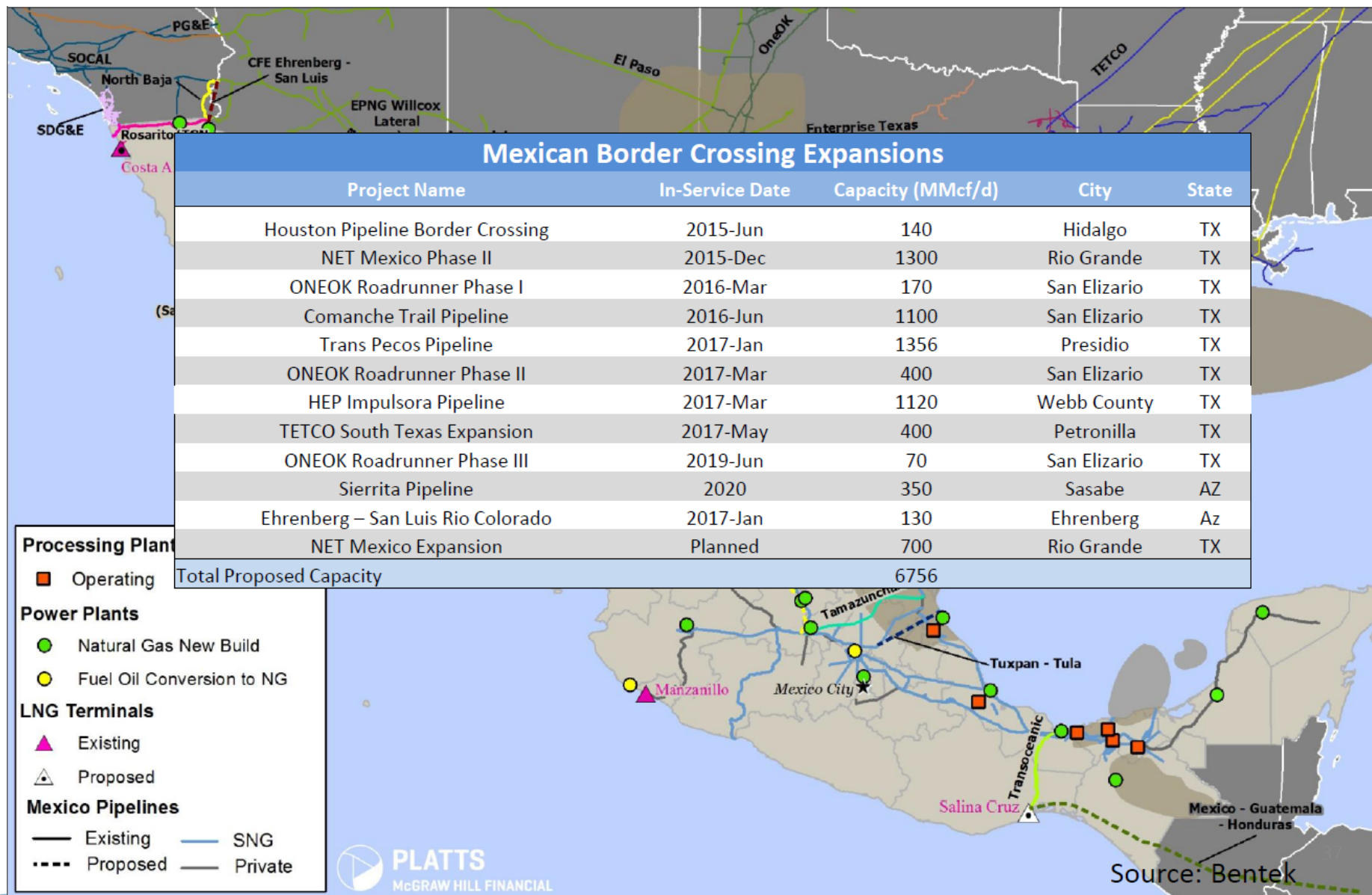
Company	Location	Date	MMlbs/yr.
Westlake	Lake Charles	March 2016	250
LyondellBasell	Corpus Christi	June 2016	800
Aither	Charleston	January 2017	600
ChevronPhillips	Cedar Bayou	January 2017	3,300
Dow	Freeport	January 2017	3,300
ExxonMobil	Baytown	January 2017	3,300
OxyChem/Mexichem	Ingleside	January 2017	1,200
Sasol	Lake Charles	January 2017	3,300
LyondellBasell	Channelview	January 2017	550
Indorama	Lake Charles	December 2017	850
Formosa	Point Comfort	January 2018	3,500

Source: Ponderosa Energy

The Big Five Issues to Watch

4. Exports to Mexico

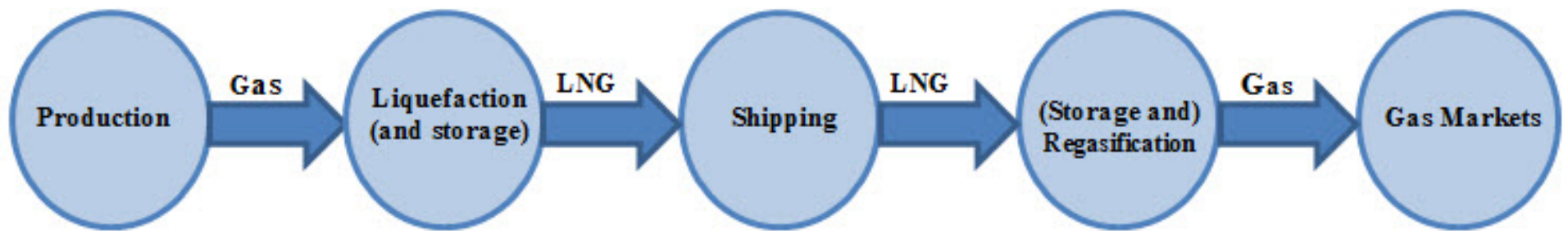
Mexico to add near 7 bcf/d of import capacity



The Big Five Issues to Watch

5. U.S. LNG Exports

The LNG Delivery Chain



Source: King & Spalding Energy Newsletter, August 2014

First LNG Cargo out of Louisiana



US LNG Export Projects Under Construction

US LNG Projects Under Construction					
Projects	Uncontracted Capacity (bcf/d)	Contracted Capacity (bcf/d)	Nameplate Capacity (bcf/d)	Percent Contracted	Online Date
Sabine Pass T1-4	0.3	2.1	2.4	89%	Feb-16 – Sept 17
Cameron LNG T1-3	0.0	1.7	1.7	100%	Early/Mid/Late -18
Freeport LNG T1-3	0.1	1.7	1.8	97%	Sept-18 – Aug-19
Cove Point T1	0.1	0.7	0.8	92%	Dec-17
Corpus Christi T1-2	0.2	1.0	1.2	86%	Jun-19, Apr-20
Sabine Pass T5	0.1	0.5	0.6	83%	19-Jan
Total	0.7	7.8	8.4	92%	NA

US LNG Export Projects Under Construction

- Nameplate US export capacity to total 8.4 bcf/d by YE 2020 with just over 8bcf/d exportable 2020.
- >90% or 7.8bcf/d of the capacity is contracted.
 - What does this mean? The off-takers pay ~\$3/MMBtu for any contracted LNG volumes they defer/cancel. Buyers could then buy LNG on the spot market for ~\$7.00/MMBtu or all in cost of ~\$10.00/MMBtu (including the cancellation fee).
 - All in US LNG landed in Asia likely runs \$7.50-\$9.50 depending on US gas price and transports costs.
- There are 5 major US LNG export projects under construction (assumes Sabine Pass is one project).
- There are another >4bcf/d of LNG export projects that are ~fully contracted, which we would consider close to FID (e.g. Lake Charles, Golden Pass).

LNG Export Economics...and its effects

- US LNG to Asia: \$2.00 Henry Hub + \$3 liquefaction charge + \$2.25 shipping = \$7.25/MMBtu
- US LNG to Europe: \$2.00 + \$3 liquefaction charge + \$1 shipping = \$6.00/MMBtu
- The liquefaction charge is how Cheniere earns a return on capital for the contracted portions of its facilities, but the actual liquefaction cost is much cheaper than \$3/MMBtu. We estimate the actual cost to liquefy the gas is ~\$0.50.
- Thus, at today's pricing and transport costs, a facility owner could ship US gas to Europe for a variable cost of ~\$4/MMBtu, sell it for ~\$6/MMBtu and net \$2/MMBtu in gross profit.

World LNG Estimated October 2014 Landed Prices



Source: Waterborne Energy, Inc. Data in \$US/MMBtu

World LNG Estimated April 2016 Landed Prices (\$U.S./MMBtu) - update



Source: Waterborne Energy, Inc. Data in \$US/MMBtu, updated May 2016
Note: Includes information and Data supplied by IHS Global Inc. and its affiliates ("IHS")
Prices are the monthly average of the weekly landed prices for the listed month.

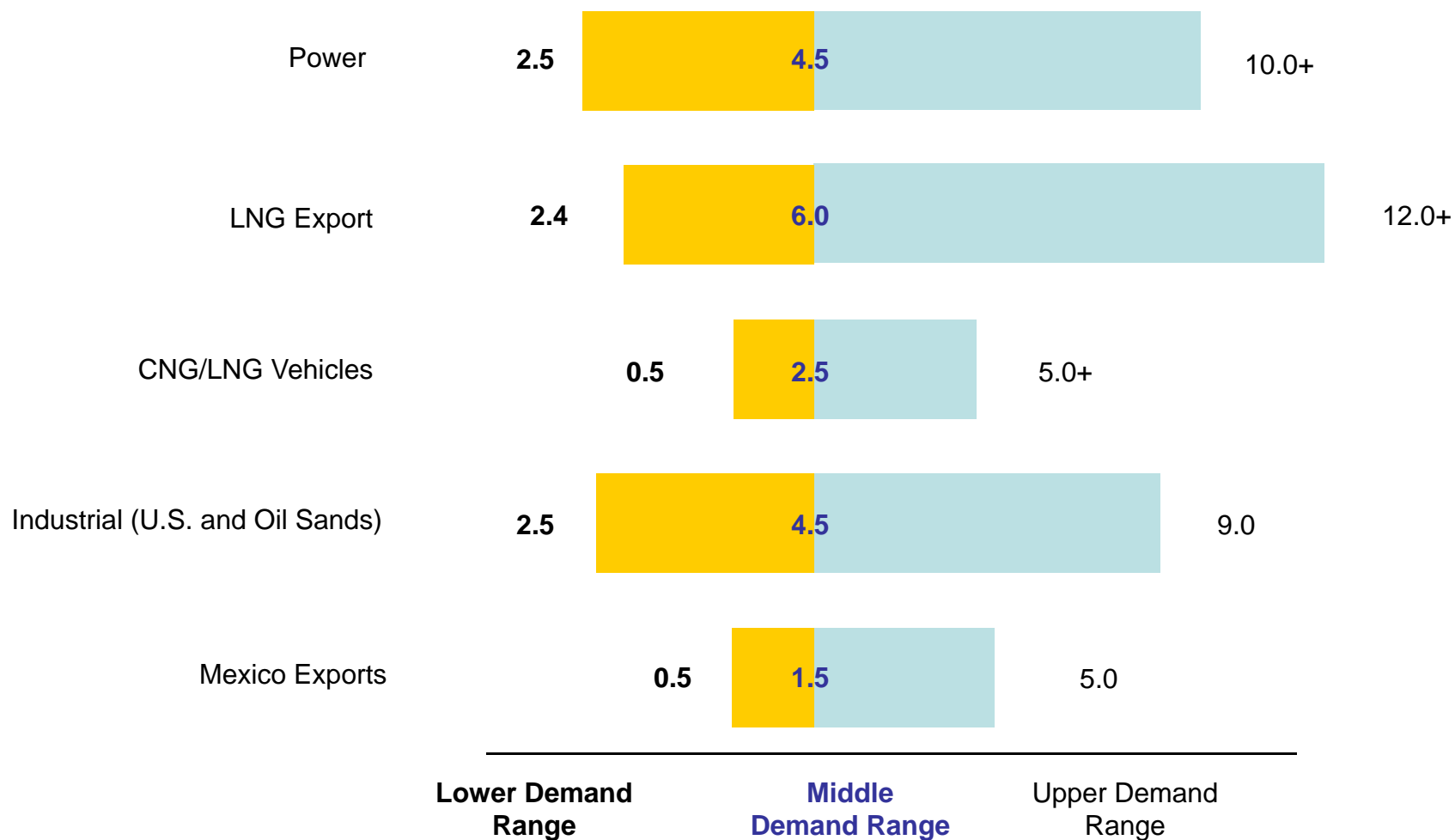
It's a buyers market

“The 7-8 BCF of U.S. LNG exports that is expected by 2020 is equal to 20% of the total world LNG import market of 32.1 BCF.”

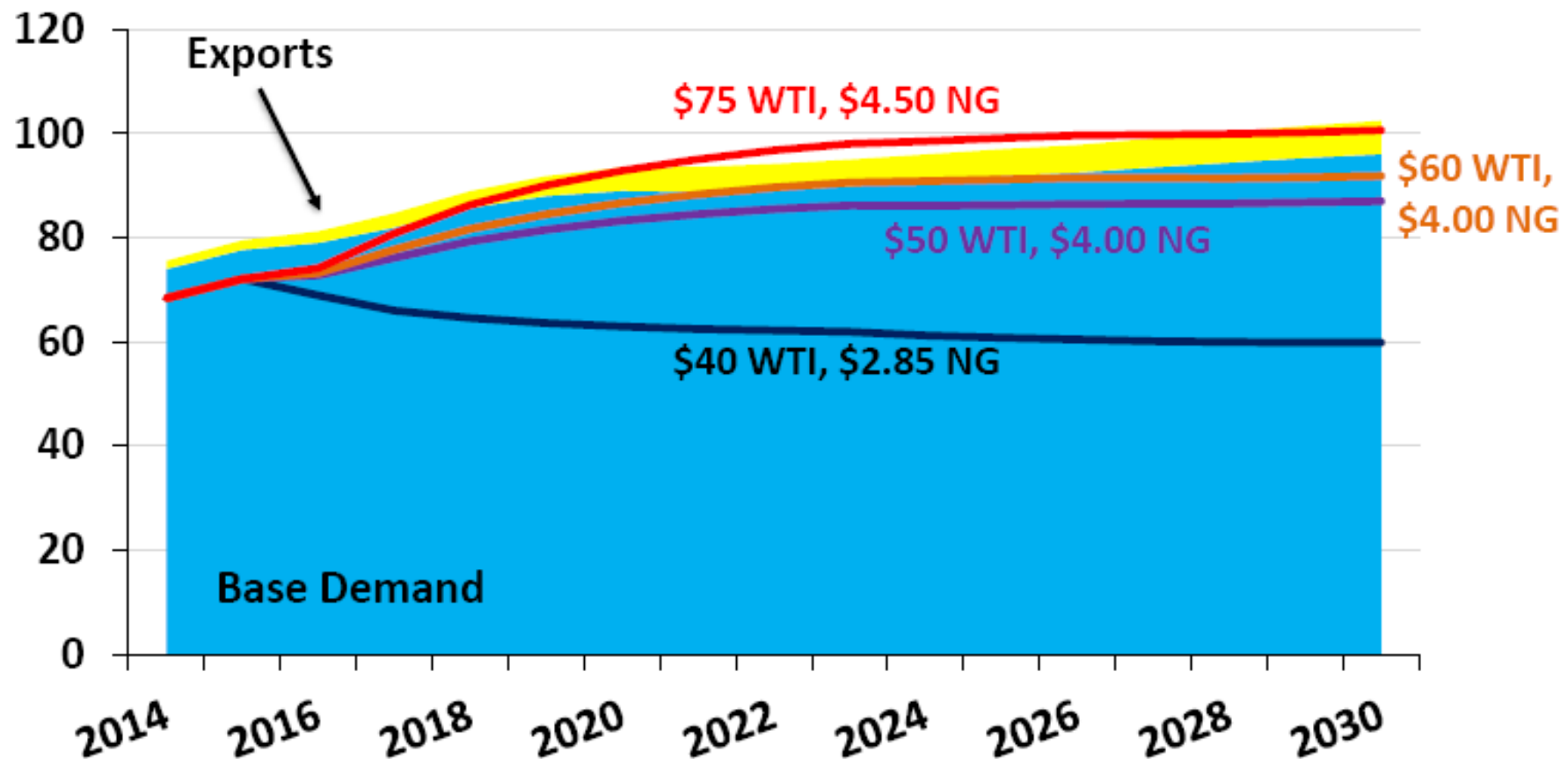


North American Natural Gas Demand Ranges by Selected Sector

Significant demand growth is possible in the LNG, transportation/HHP and power sectors through 2020 in Bcf per day.

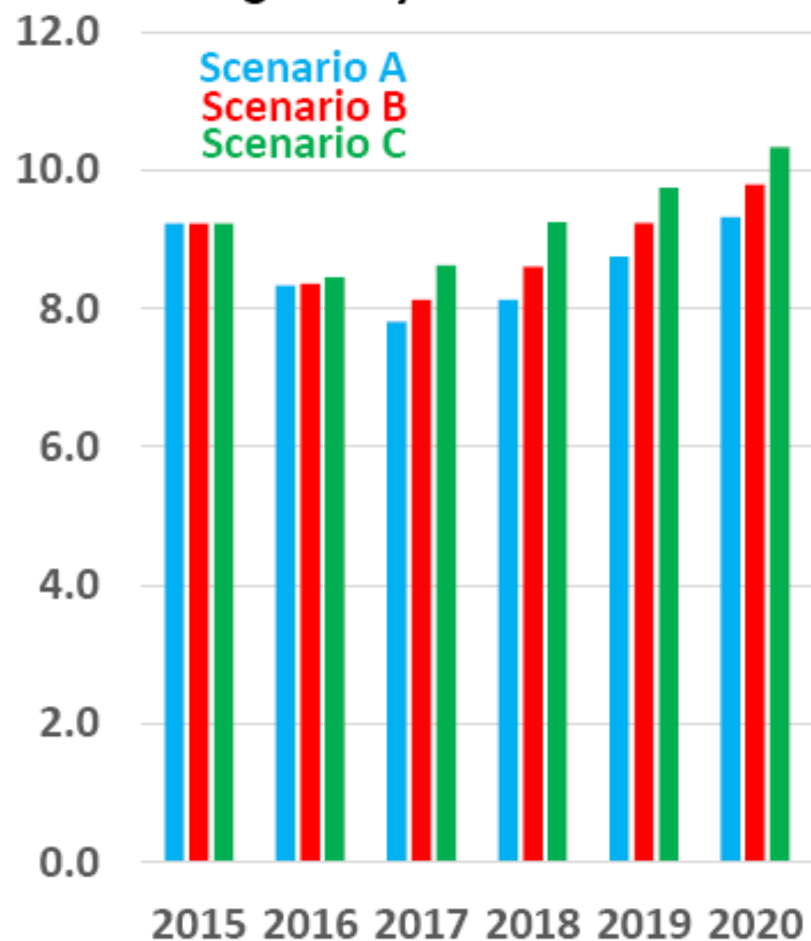


Natural Gas Prices Will Be Shaped By Crude, Hedge Positions & Demand



U.S. Production Base Will Grow At WTI Greater Than \$55

Average Daily Crude Production



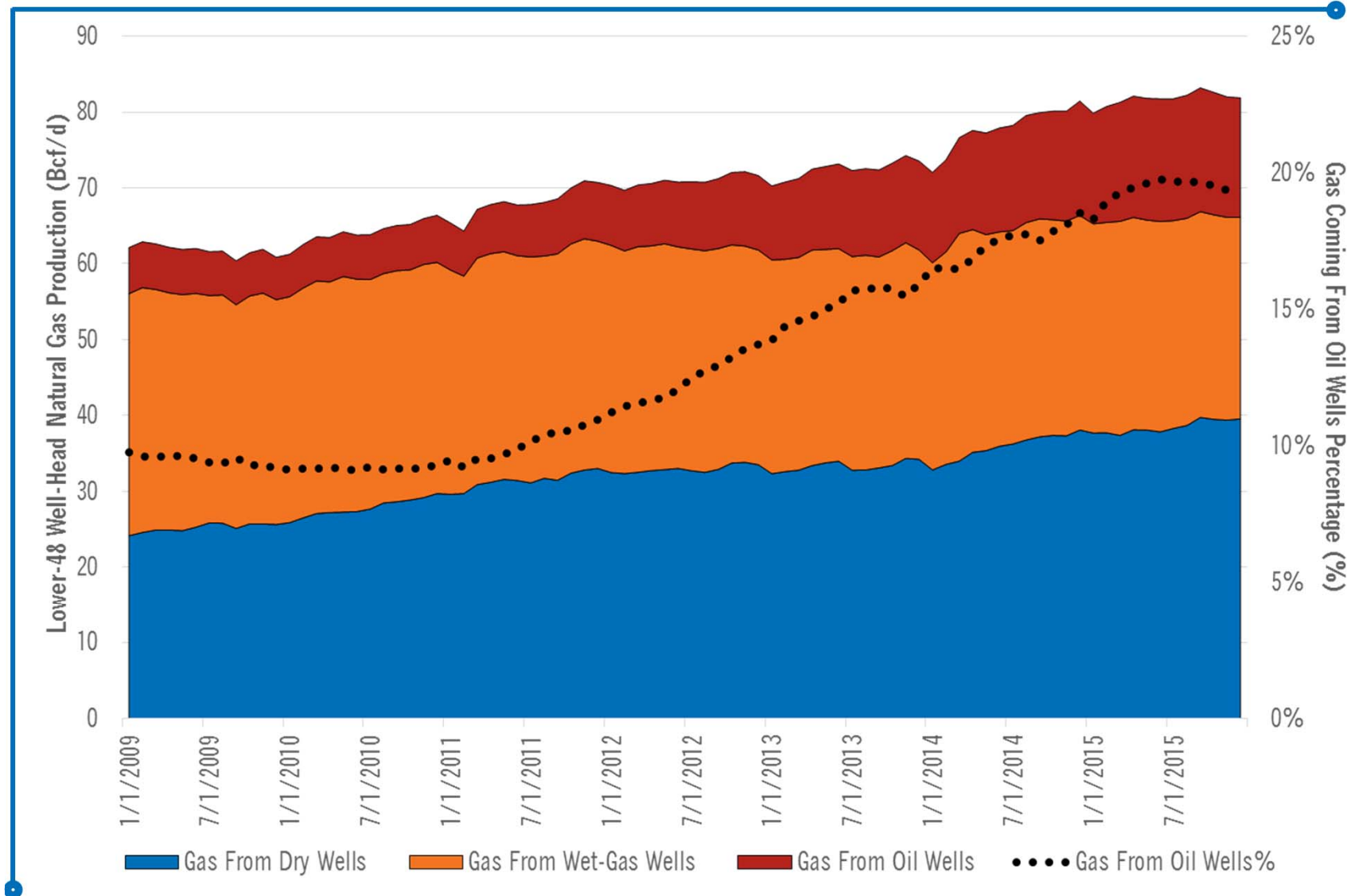
Underlying Price Scenarios

	Scenario A	Scenario B	Scenario C
2016	\$ 30.00	\$ 33.50	\$ 39.92
2017	\$ 37.50	\$ 45.00	\$ 55.00
2018	\$ 49.42	\$ 54.50	\$ 60.00
2019	\$ 54.67	\$ 60.00	\$ 65.00
2020	\$ 60.00	\$ 65.00	\$ 70.00

Base Case
Natural Gas Price
Assumption

2016	\$2.30
2017	\$3.25
2018	\$3.50
2019	\$3.75
2020	\$3.75

Gross Gas by GPM Historical



PONDEROSA ENERGY

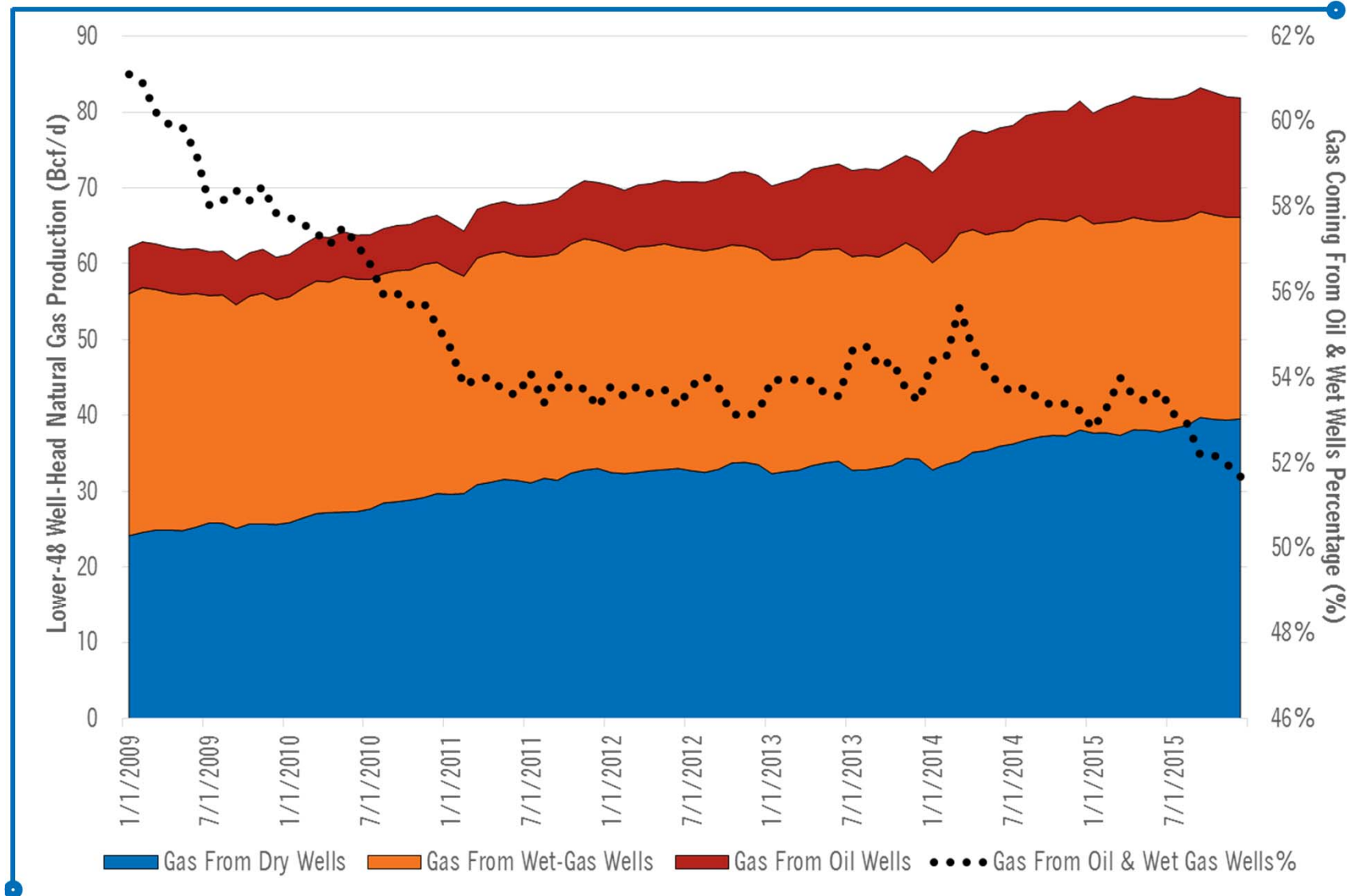
Defined By:

Gas From Dry Wells: < 1.15 GPM (Gallons Per Mcf Of NGLs)

Gas From Wet-Gas Wells: >= 1.15 & <= 3.0 GPM

Gas From Oil Wells: >= 3.0 GPM

Gross Gas by GPM Historical



PONDEROSA ENERGY

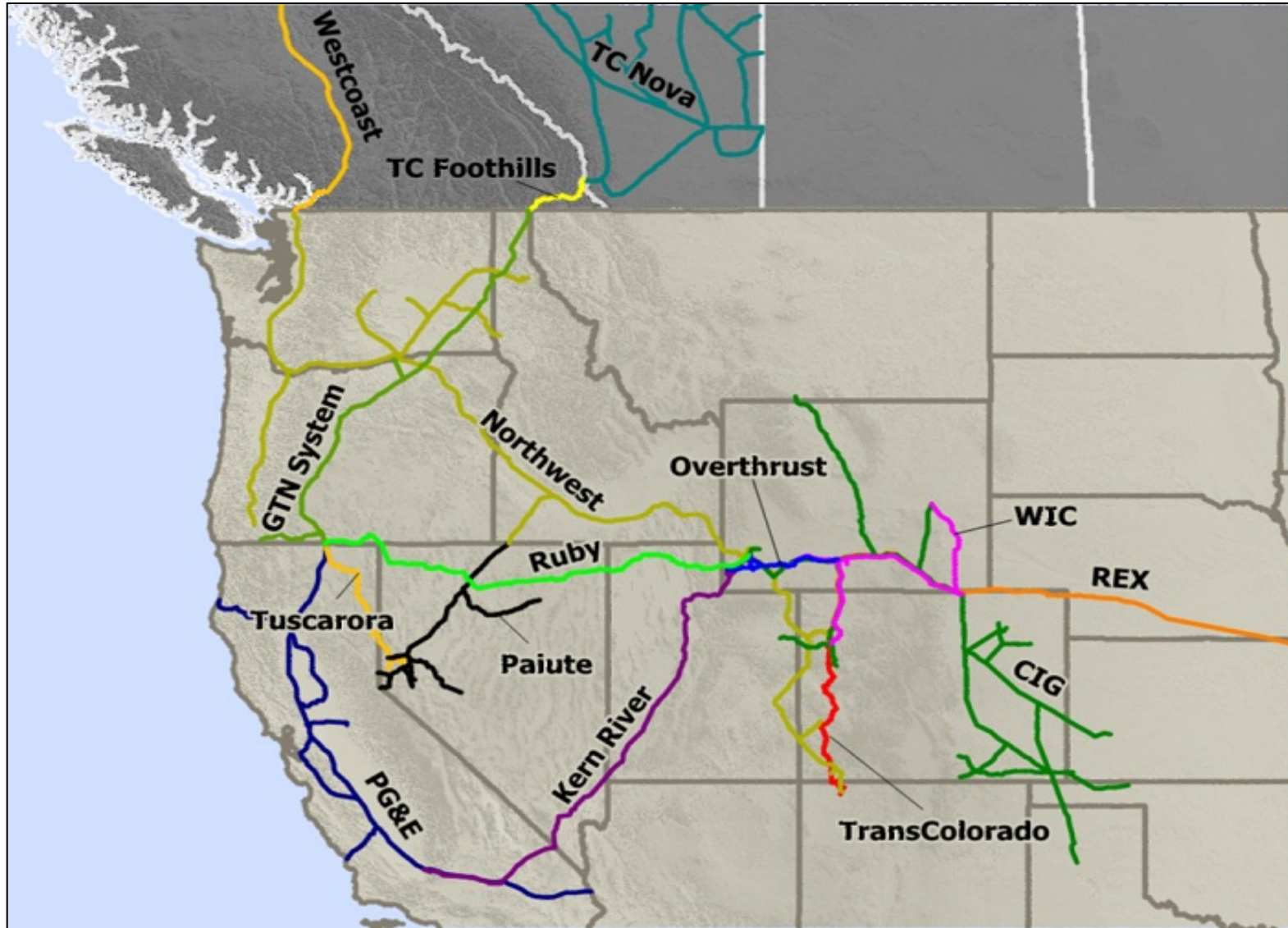
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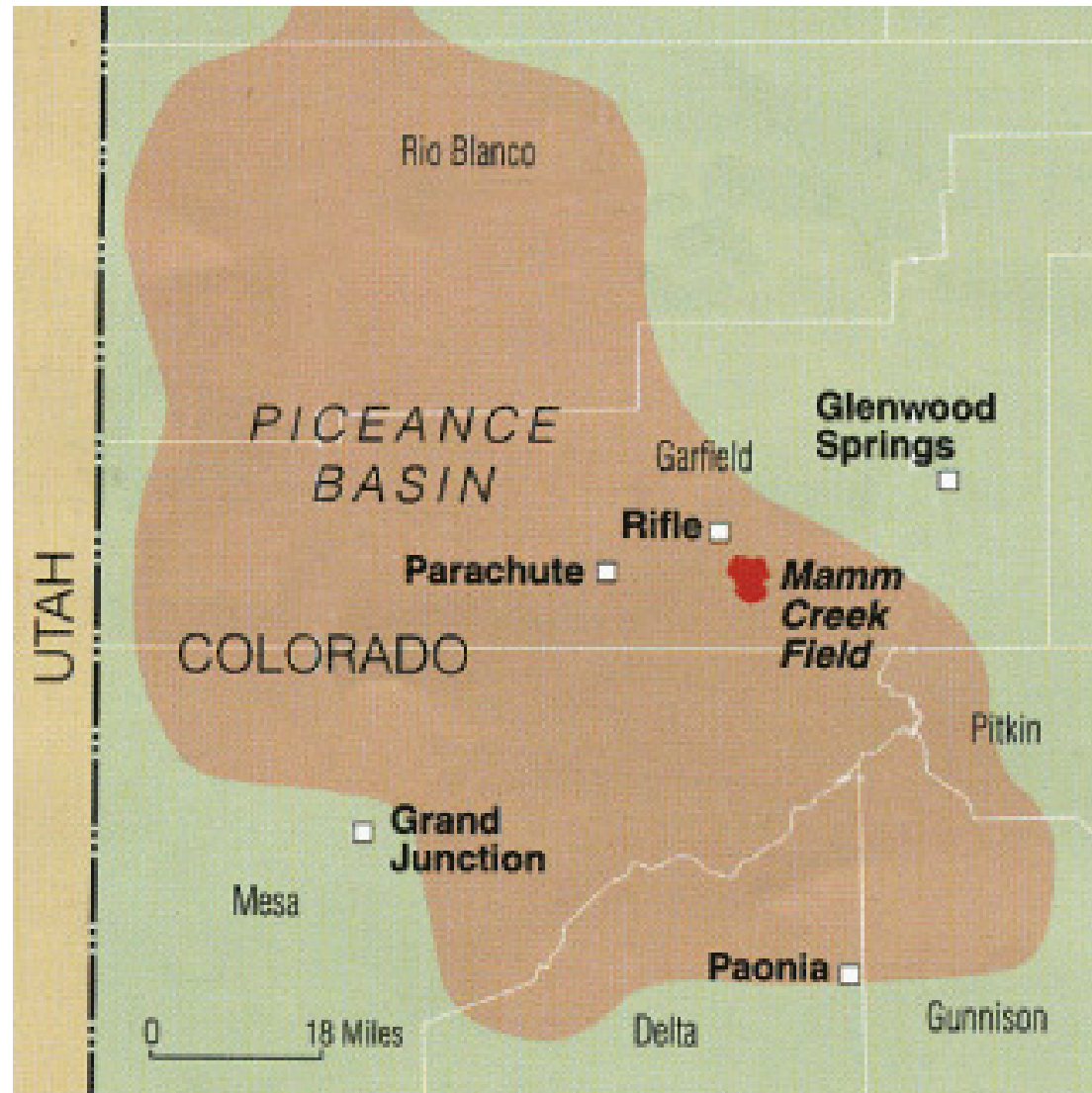
Gas From Wet-Gas Wells: >= 1.15 & <= 3.0 GPM

Gas From Oil Wells: >= 3.0 GPM

Rockies Pipeline Infrastructure



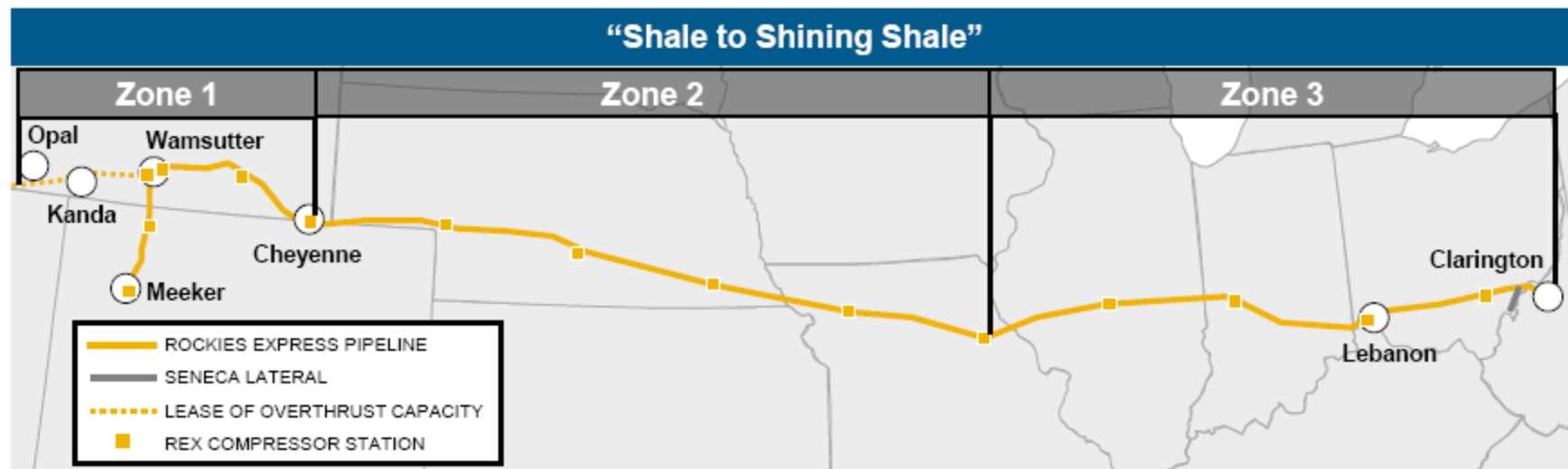
Piceance Basin Map



Rockies Express Pipeline Overview

Prominent pipeline providing natural gas transportation service to North American energy markets

- REX is becoming the nation's northernmost natural gas header system
- Attractive access to both supply basins and large end user markets
- Currently moving both Rocky Mountain and Appalachian production



Asset Overview

- Placed in service in November 2009
- ~1,712 miles of 42" and 36" pipeline
- ~1.8 Bcf/d of West-to-East capacity
- ~2.6 Bcf/d of Zone 3 East-to-West-capacity⁽¹⁾
- Contracted capacity supports stable cash flow
- Access to substantially all major natural gas supply basins in the Rocky Mountain region, Ohio and Pennsylvania corridors
- Favorable proximity to numerous major end-use markets

Highlights

- Encana's contract Extended through 2024
 - ~0.5 Bcf/d of west-end volume contracted through 2024⁽²⁾
- Zone 3 for bidirectional flows
 - ~2.5 Bcf/d contracted of 2.6 Bcf/d Zone 3 East-to-West capacity
 - First East-to-West volumes flowed in June 2014
 - Majority of contracts are 15-20 year terms
- REX repaid \$450mm of bond maturities in 2015
- **>75% of the 2019 recontracting risk has been mitigated**, as it relates to FY2013 EBITDA⁽³⁾
- 98% of 2015 cash flow was Take or Pay
- Weighted Average Contract Life⁽⁴⁾
 - East-to-West Contracts: ~17 years
 - West-to-East Contracts: ~5 years

Encana Contract Extension

On May 2 REX filed with FERC an agreement to extend Encana’s foundation shipper contract on REX

Summary

- Encana combines their 2 contracts on REX into 1 contract
- Encana’s new contract is **extended** through May, 2024
- Encana’s rate is lowered in the near term
- REX’s Zone 1 to Zone 3 Most Favored Nations (“MFN”) provisions still expire in 2019

Benefits

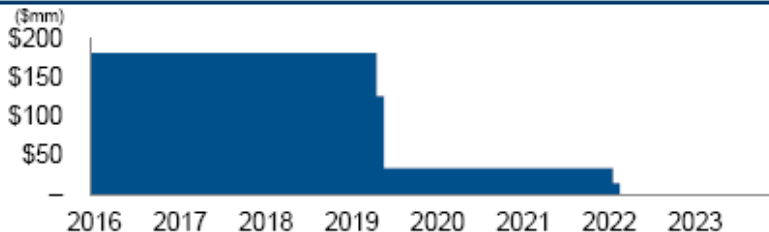
- Extends the contracted cash flow on REX’s West-end
- Staggers West-end contract expirations
- De-risks West-end recontracting
- Demonstrates value of West-end capacity post-2019

Contract Updates

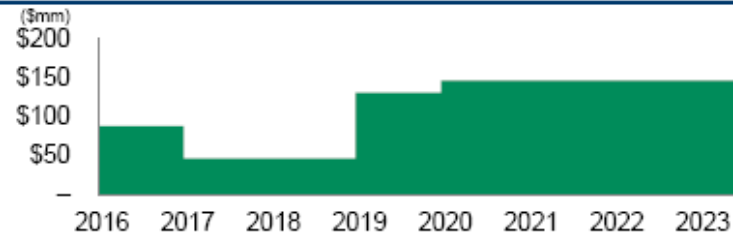
Legacy Contracts		Volume (dth/d)	Rate (\$ / dth) ⁽¹⁾	Annual Rev. (\$mm)	Contract Length (years) ⁽²⁾
Total / Average Contracted Across All Zones		506,000	\$0.986	\$182	4 ⁽³⁾

Extended Contract		Period	Start Date	Expiration Date	Volume (dth/d)	Rate (\$ / dth)	Annual Rev. (\$mm)	Contract Length (years) ⁽²⁾
		2016	1/1/2016	12/31/2016	506,000	\$0.373	\$69 ⁽⁴⁾	8
		2017-2019	1/1/2017	2/28/2019	506,000	0.250	46	
		2019-2024	3/1/2019	5/19/2024	506,000	0.794	\$147	

Encana Legacy Contract Revenue



Encana Extended Contract Revenue

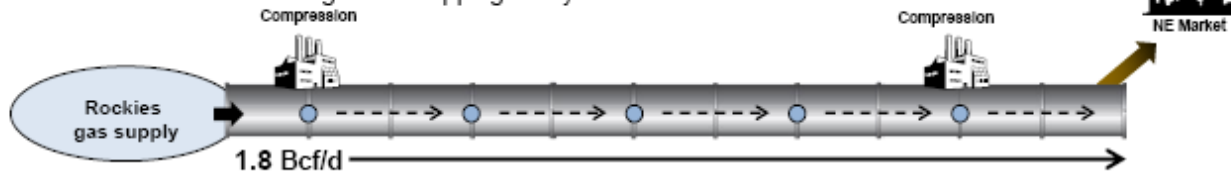


(1) Represents average rate for Zone 1 to Zone 3 transport.
 (2) As of 12/31/2015.
 (3) Weighted average contract length based off of revenue per legacy contract.
 (4) Full year 2016 inclusive of 4 months of the previous contracts and 8 months of the modified and extended contract.

The Evolution of REX

Original
2009 – 2013

- West-to-East – REX originated shipping solely West-to-East

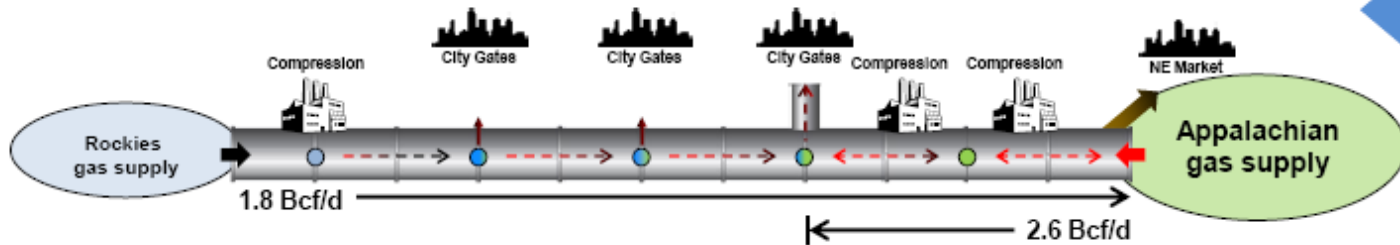


Potential marketable capacity

1.8 Bcf/d

2014 – 2019

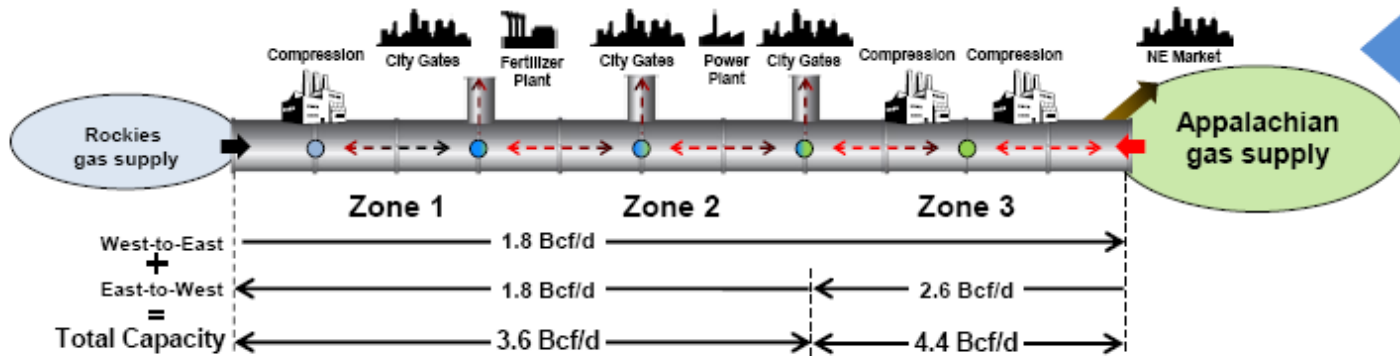
- West-to-East – West-to-East transport continues to play an important function for REX
- Seneca Lateral and East-to-West Projects – Contracted base 1.8 Bcf/d of East-to-West capacity in Zone 3
- Capacity Enhancement (under construction) – Increases East-to-West capacity from 1.8 Bcf/d to 2.6 Bcf/d in Zone 3
- Direct Market Access (to be constructed) – REX plans to construct an interconnect for Vectren facility in 2017



4.4 Bcf/d

Future
2019 and Beyond

- Northernmost Header System** – Tallgrass's vision is to make REX a fully bi-directional header system across all zones creating superior supply and demand optionality for its customers



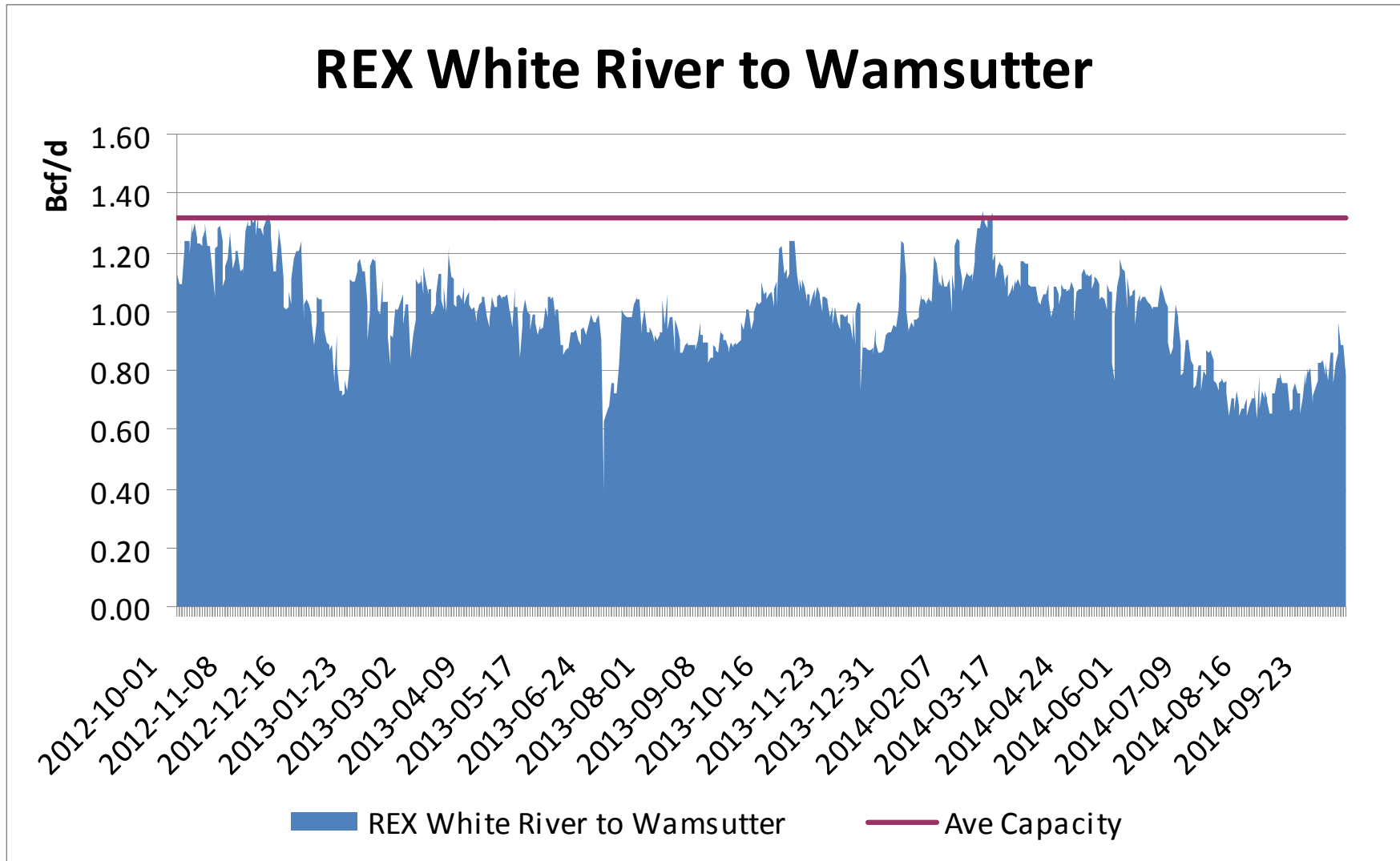
6.2 Bcf/d⁽¹⁾

(1) Some additional capital expenditure may be required to make Zones 1 and 2 fully bidirectional.

REX (Entrega) Anchor Shippers

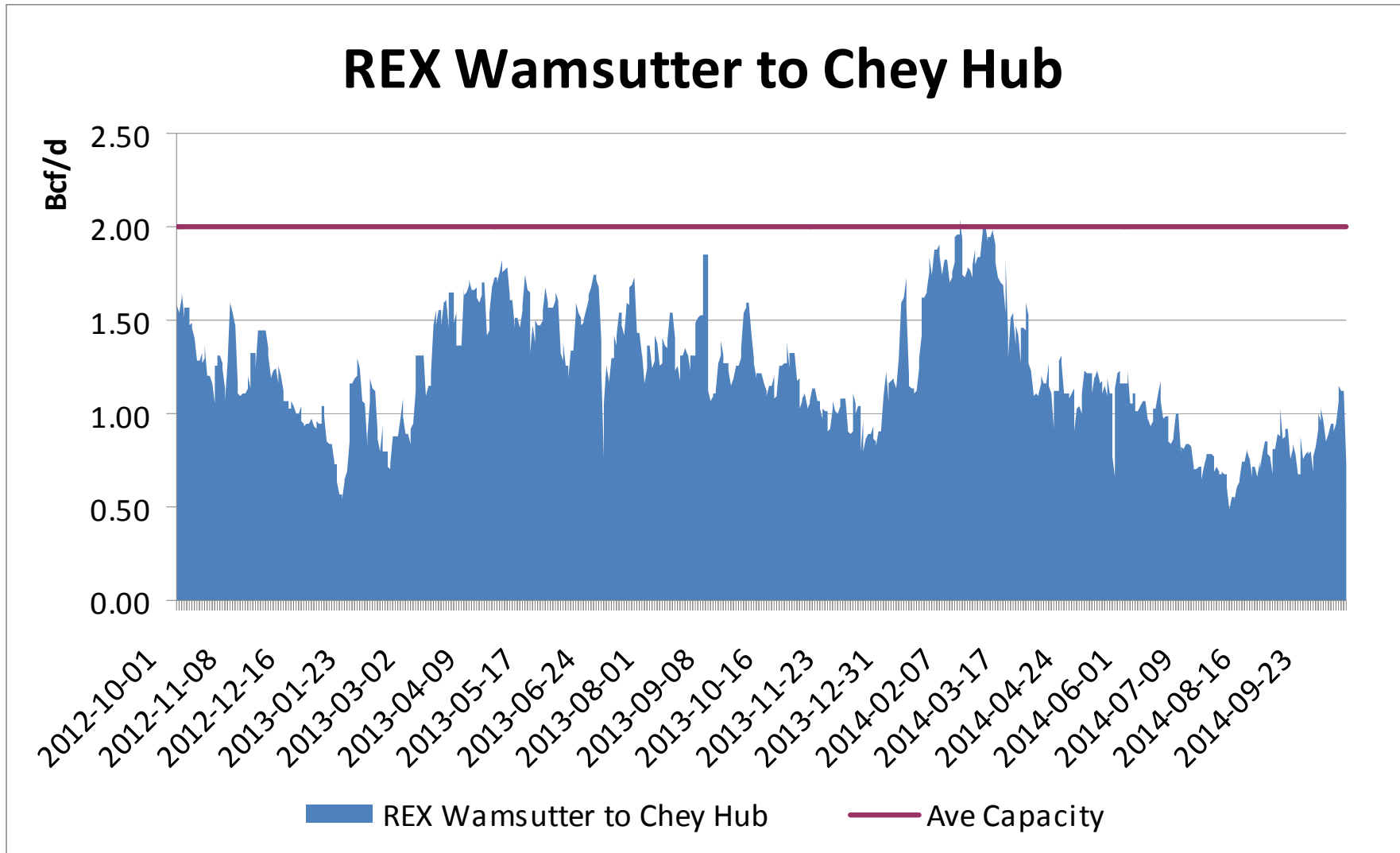
<u>Shipper</u>	<u>Capacity</u>	<u>Contract Expiration</u>
Berry Petroleum Company	10,000	11/11/2019
Bill Barrett Corporation	25,000	11/11/2019
BP Energy Company	200,000	11/11/2019
ConocoPhillips Company	250,000	11/11/2019
Encana Marketing (USA) Inc.	500,000	2/13/2022
Marathon Oil Company	12,000	11/11/2019
Occidental Energy Marketing, Inc.	120,000	12/8/2019
Sempra Rockies Marketing LLC	100,000	11/11/2019
WPX Energy Marketing, LLC	165,000	12/31/2015
Wyoming Interstate Company, L.L.C.	80,000	12/8/2019
	1,462,000	

REX Capacity



Source: Bentek Energy

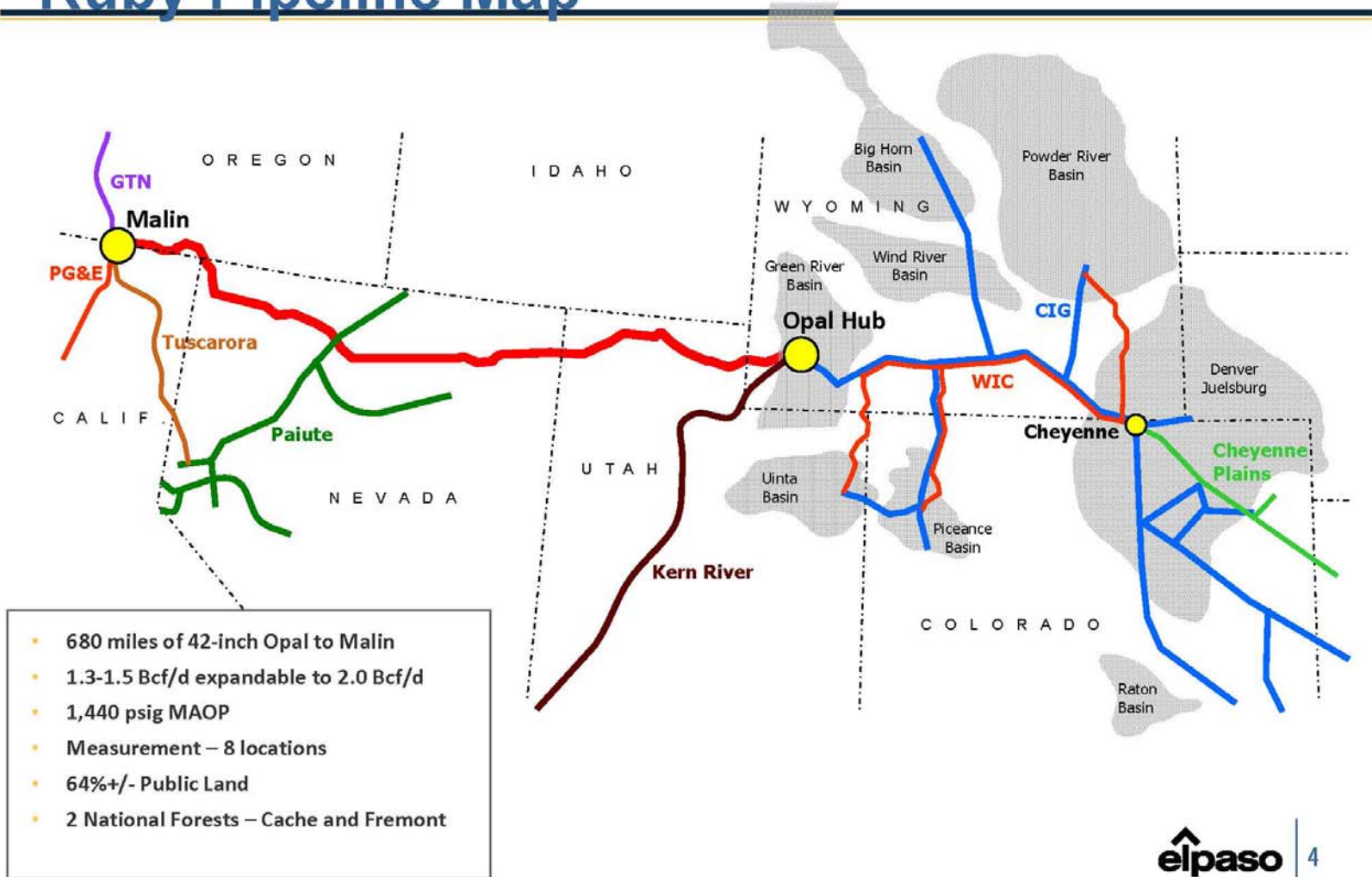
REX Capacity



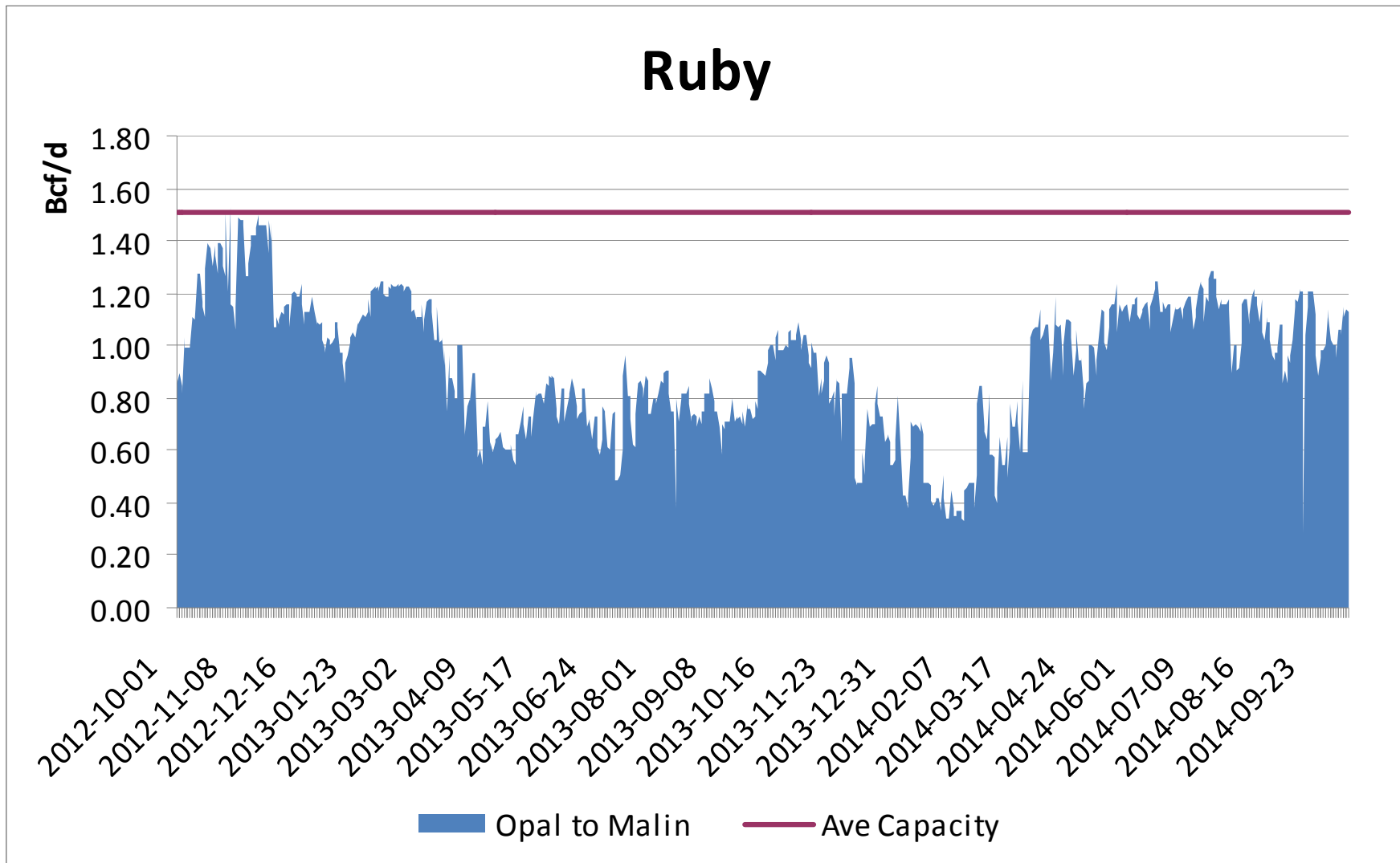
Source: Bentek Energy

Ruby Pipeline Map

Ruby Pipeline Map



Ruby Capacity



Source: Bentek Energy

Terra Energy Partners LLC Agrees to Acquire Piceance Basin Assets from WPX Energy

February 9, 2016

- For \$910 million cash, Terra acquires a 200,000 net acre position in the Piceance with net production of 500,000 MMBtu/day
- These assets also include deep rights in 150,000 net acres for the emerging Mancos-Niobrara play

Source: PR Newswire.com

WPX Energy Eliminates Piceance Transport Obligations

May 25, 2016

- Buyout releases WPX from nearly \$400 million in future demand payments
- WPX paid Citadel \$239 million to assume interstate pipeline firm demand payments
- “It strengthens our liquidity, increases cash flow in subsequent years, frees up future revolver capacity and completes our full exit from the Piceance Basin.”

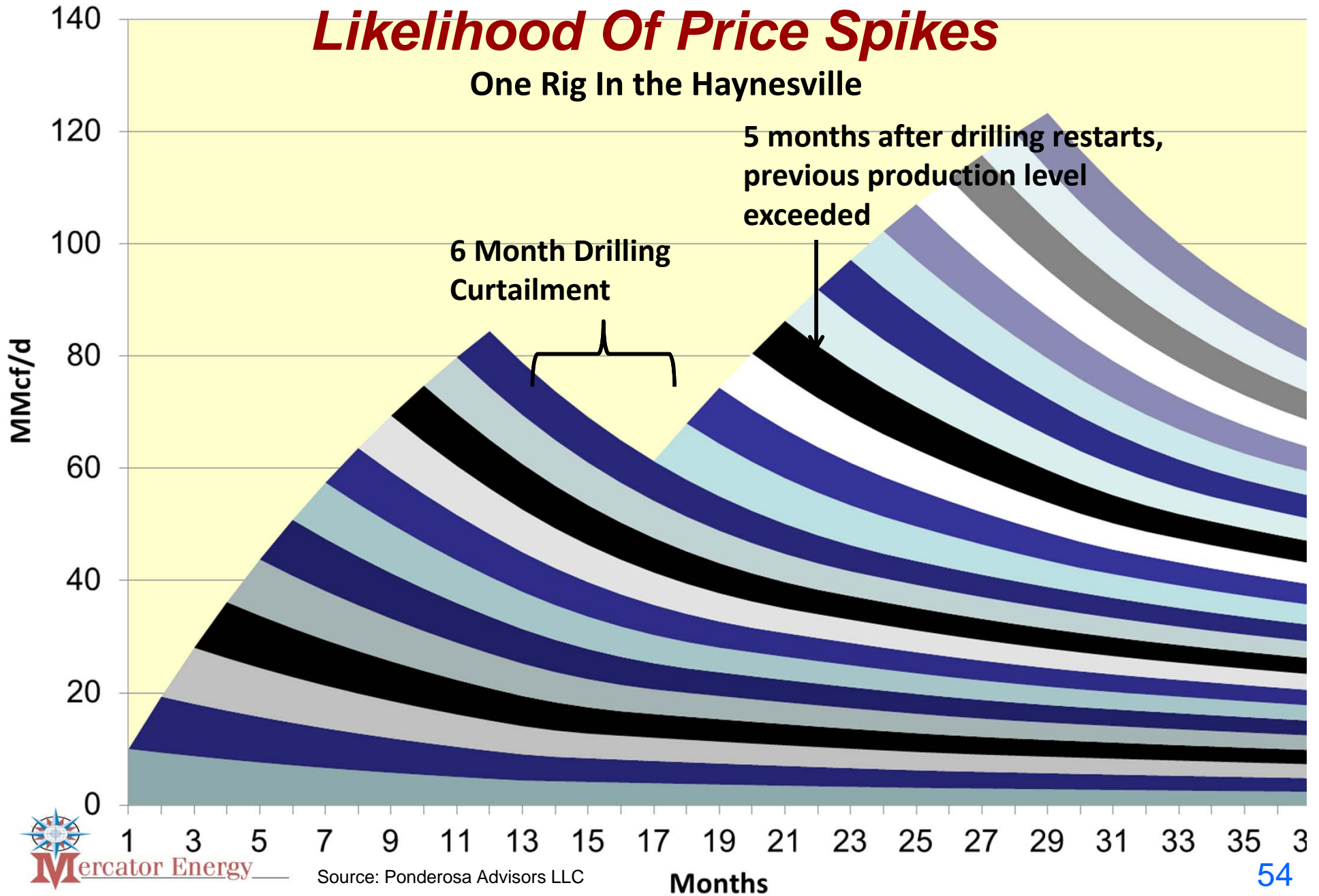
Source: businesswire.com

Conclusions/Predictions

- Oil prices will stay in their current range of \$45-\$55 WTI
- The NYMEX natural gas price in calendar year 2017 will be above \$4.00 per MMBtu for several months and through calendar year 2018.
- The price differential between the NYMEX and Western Colorado will be \$0.25-\$0.30 less than the NYMEX.
- That Western Colorado price should “resurrect” at least 5-10 Piceance Basin drilling rigs in the latter part of 2017.
- Available Western U.S. pipeline capacity and liquidity will be a key element to future drilling in Western Colorado.

The "Ferrari" Affect Substantially Reduces The Likelihood Of Price Spikes

One Rig In the Haynesville



Jordan Cove?

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Piceance Basin Rig Count

Date	BBG	BRY	COP	CVX	DPTR	ECA	MRO	NBL	OXY	PETD	PXP	WLL	WPX	XOM	Other S	Total Uinta Basin
Q4'12	0	0	0	1	0	5	0	0	0	0	0	0	5	0	1	12
Q1'13	0	0	0	0	0	5	0	0	0	0	0	0	6	0	0	11
Q2'13	0	0	0	0	0	5	0	0	0	0	0	0	7	0	1	14
Q3'13	0	0	0	0	0	5	0	0	0	0	0	0	7	0	3	15
Q4'13	0	0	0	0	0	4	0	0	0	0	0	0	7	0	2	13
Q1'14	0	0	0	0	0	0	0	0	0	0	0	0	7	0	1	8
Q2'14	0	0	0	0	0	0	0	0	0	0	0	0	9	0	2	11
Q3'14	0	0	0	0	0	0	0	0	1	0	0	0	9	0	4	14
Q4'14	0	0	0	0	0	1	0	0	0	0	0	0	9	0	4	14
Q1'15	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	10
Q2'15	0	0	0	0	0	0	0	0	0	0	0	0	3	0	7	10
Q3'15	0	0	0	0	0	0	0	0	0	0	0	0	2	0	5	7
Q4'15	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	4
Q1'16	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	3
Q2'16	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	3
4 Wks Ago	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	3
Prior Wk	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
5/20/16	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2

Source: Tudor Pickering Holt & Co.