

IPAA Leaders in Industry Luncheon

Upstream Deal Flow Environment – Past, Present and Future

Are Those Green Shoots Growing or Weeds?

January 11, 2017

William A. Marko
Managing Director
Jefferies LLC

Jefferies Energy Group - 2016 Completed M&A

<p>December 2016 Pending</p>  <p>\$1,240,000,000</p> <p>Sale of Marcellus Shale assets to Alta Marcellus Development Sole Financial Advisor</p>	<p>December 2016 Pending</p>  <p>\$2,428,000,000</p> <p>Sale of Delaware Basin assets to Diamondback Energy, Inc. Sole Financial Advisor</p>	<p>December 2016 Pending</p>  <p>\$1,850,000,000</p> <p>Sale of SCOOP assets to Gulfport Energy Corporation Sole Financial Advisor</p>	<p>December 2016 Pending</p>  <p>\$915,000,000</p> <p>Sale of Haynesville assets to Undisclosed Buyers Sole Financial Advisor</p>
<p>October 2016 Pending</p>  <p>\$1,600,000,000</p> <p>Sale of Midland Basin assets to SM Energy Company Sole Financial Advisor</p>	<p>October 2016 Pending</p>  <p>\$2,400,000,000</p> <p>Sale of Delaware Basin assets to RSP Permian, Inc. Sole Financial Advisor</p>	<p>September 2016</p>  <p>\$2,000,000,000</p> <p>Purchase of GOM assets from Freeport McMoRan Sole Financial Advisor</p>	<p>August 2016</p>  <p>\$980,000,000</p> <p>Sale of Midland Basin assets to SM Energy Company Lead Financial Advisor</p>
<p>June 2016</p>  <p>\$888,000,000</p> <p>Sale of STACK assets to Marathon Oil Corporation Sole Financial Advisor</p>	<p>June 2016</p>  <p>\$1,832,000,000</p> <p>Sale of Various N. American assets to Undisclosed Buyers Lead Financial Advisor</p>	<p>May 2016</p>  <p>\$407,000,000</p> <p>Sale of West Virginia assets to EQT Corporation Sole Financial Advisor</p>	<p>April 2016</p>  <p>\$303,000,000</p> <p>Acquisition of Midland Basin assets From Big Star Oil and Gas, LLC Financial Advisor</p>
<p>April 2016</p>  <p>\$200,000,000</p> <p>Sale of Mississippian assets to White Star Petroleum, LLC Lead Financial Advisor</p>	<p>March 2016</p>  <p>\$420,000,000</p> <p>Sale of Haynesville and Bossier assets to Covey Park Energy Sole Financial Advisor</p>	<p>February 2016</p>  <p>\$385,000,000</p> <p>Acquisition of Western Anadarko assets from Chesapeake Exploration, LLC Sole Financial Advisor</p>	

(1) Source: PLS. League tables include transactions since January 1, 2016 with announced sellside advisors. For transactions with more than one advisor, the total transaction value was assigned equally to each advisor.
 (2) Source: PLS. League tables include transactions since January 1, 2010 with announced sellside advisors. For transactions with more than one advisor, the total transaction value was assigned equally to each advisor.

Worldwide Energy Demand

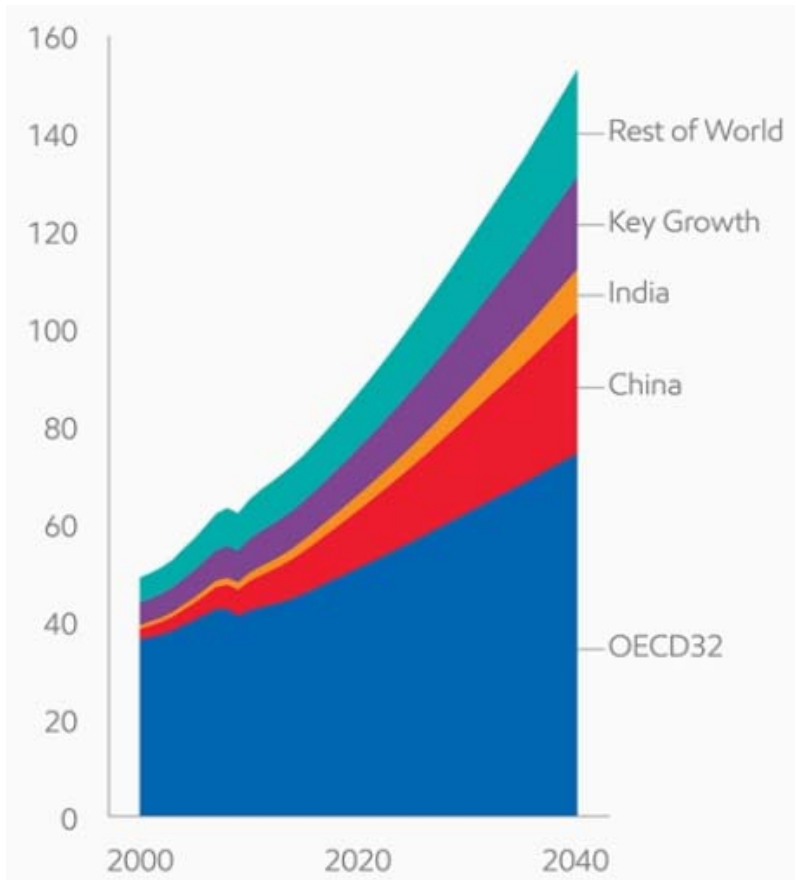
China and India and Other Energy Emerging Economies

- The two key drivers for future energy use
- GDP per capita expected to triple in China and India
 - 50% of worldwide growth in energy
 - India expected to pass China in population by 2040 (1.6 billion people)
- Other key energy growth economies which will drive 30% of energy growth
 - Brazil
 - Egypt
 - Indonesia
 - Iran
 - Mexico
 - Nigeria
 - Saudi Arabia
 - South Africa
 - Thailand
 - Turkey
 - GDP per capita is expected to double in these countries
- According to Brookings Institute, number of people considered middle class will rise from 2 billion in 2014 to 5 billion in 2030, with most of the growth in India and China
- Natural gas is the largest growing energy supply, increasing 40%

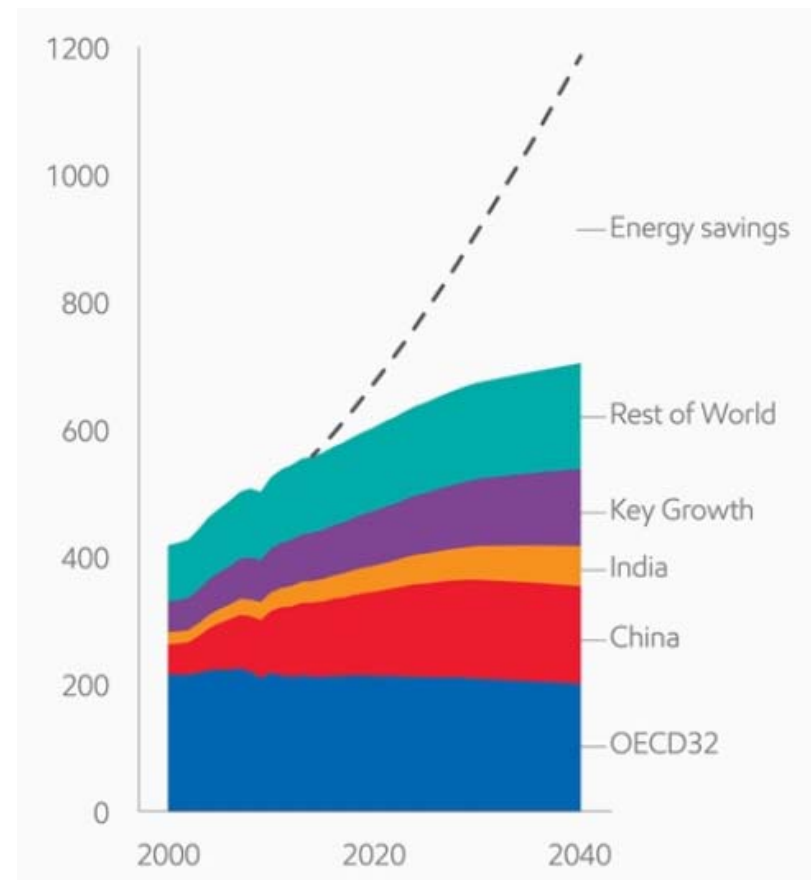
Massive Economic Growth Drives Increased Need for Energy

Fortunately, Energy Efficiency Vastly Lowers Energy Use Per GDP

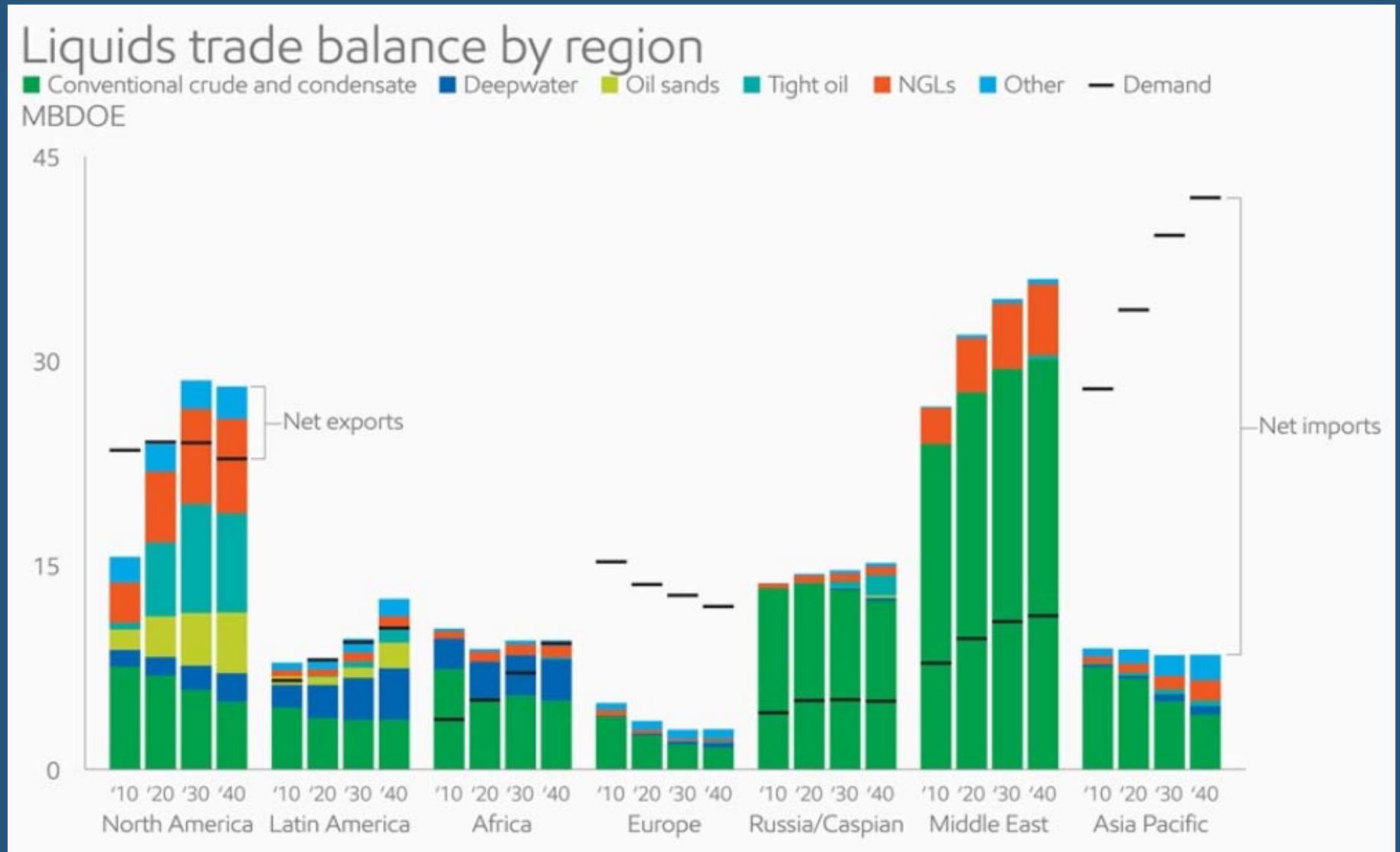
GDP
Trillion 2010\$



Energy Demand
Quadrillion BTUs

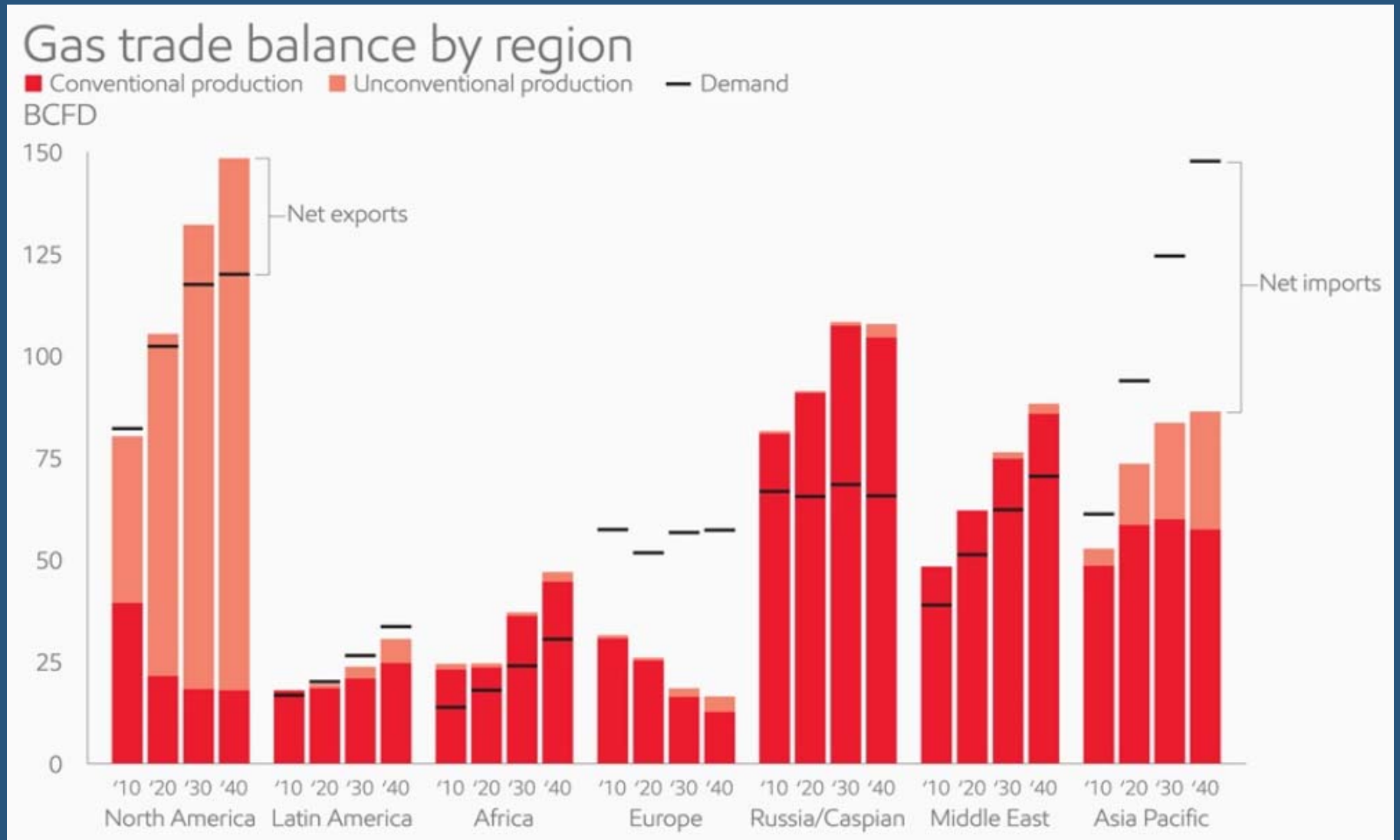


North America Swings to a Net Exporter as Shale Growth Continues



Source: ExxonMobil - The Outlook for Energy: A View to 2040

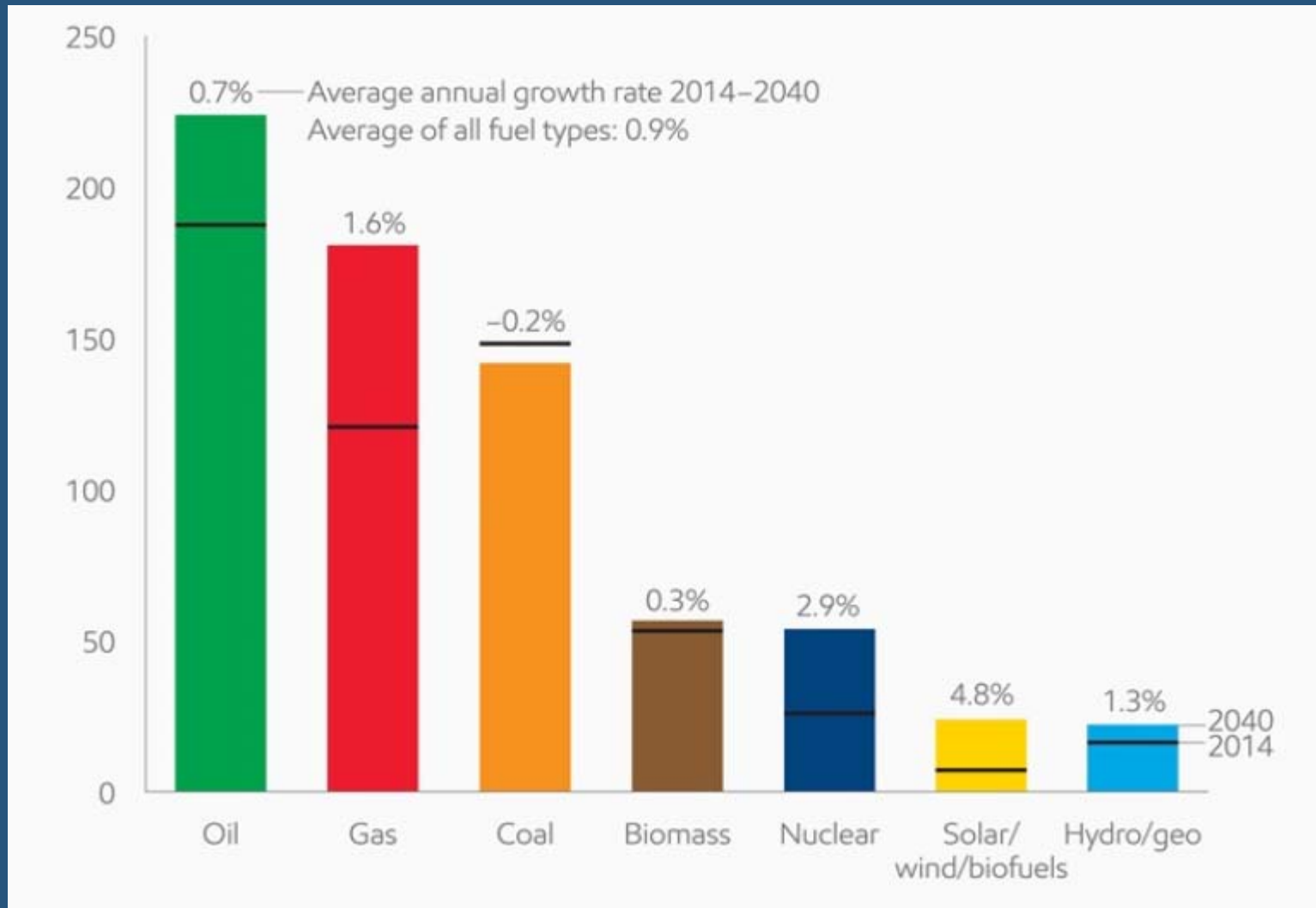
By 2040, Unconventional Gas Will Account for About 1/3rd of Global Gas



Source: ExxonMobil - The Outlook for Energy: A View to 2040

Oil Remains the World's Top Fuel, But Natural Gas Grows the Most

Global Fuel Demand in 2040 – Projections
Quadrillion BTUs



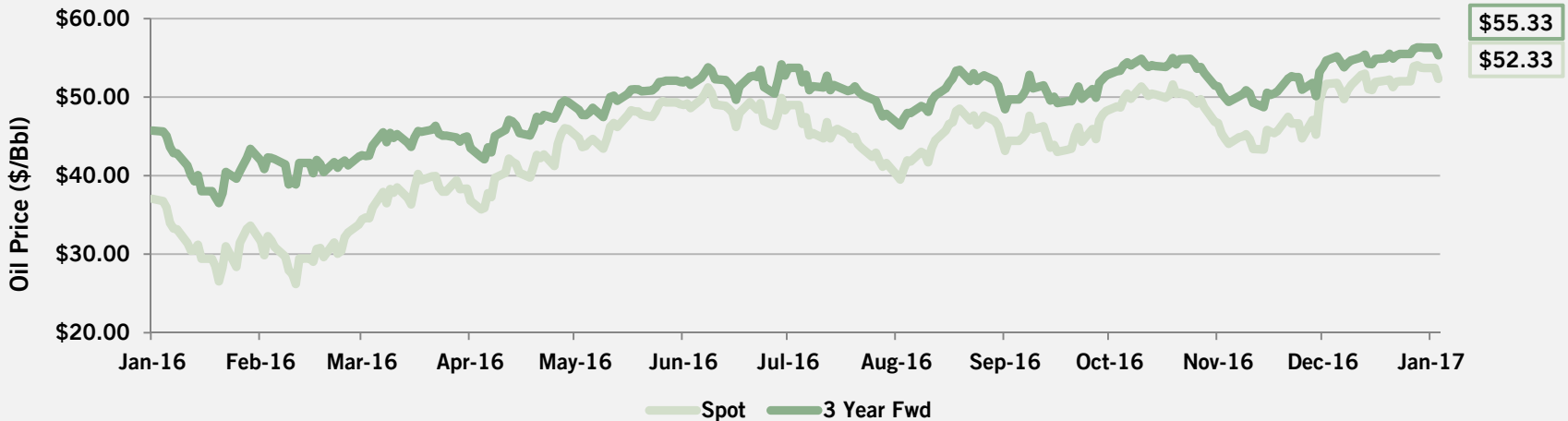
Source: ExxonMobil - The Outlook for Energy: A View to 2040

Current Market Overview

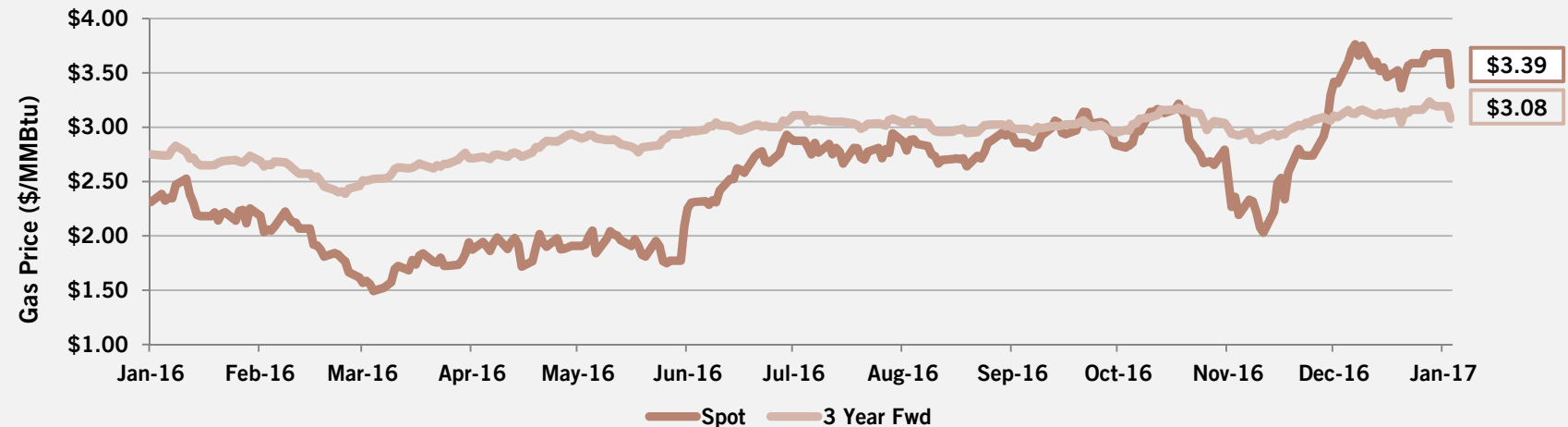
- The M&A market has seen significant improvement recently
 - \$50 / Bbl oil and \$3 / MMBtu gas price is a healthy capitulation point for buyers and sellers
 - Large scale deals have recently been done which fit one of three themes:
 1. Growth acquisitions in existing core areas with equity component and / or overnight equity raise
 2. Strategic acquisitions in new core area to build diversification
 3. Private capital backed major initial or follow on acquisition
 - Non-core asset sales continuing, increasing supply of asset sales in a number of plays / basins
- Financial markets showed a material improvement in 2016
 - Yields have tightened considerably since the Q1 2016 trough;
 - High yield markets are open for business – recent issuances have priced at attractive yields
 - Public E&P equity indices are up over 50% from February lows
 - Robust demand in the equity markets; most active new issue market since Q1 2015
 - More aggressive deals in terms of use of proceeds and market cap have recently priced
- Private capital markets are still active and remain a primary source of transaction financing
 - The universe of private capital providers is expanding; abundance of capital ready to be deployed in the space
 - There is still “\$100 billion” in private capital seeking energy deals
- Private capital continues to increase its flexibility in terms of geography, deal structure, terms, and other aspects

Improvement in Commodity Prices Driving E&P Momentum

Historical NYMEX Oil Prices (\$ / Bbl)
















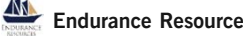




























Historical NYMEX Natural Gas Prices (\$ / MMBtu)



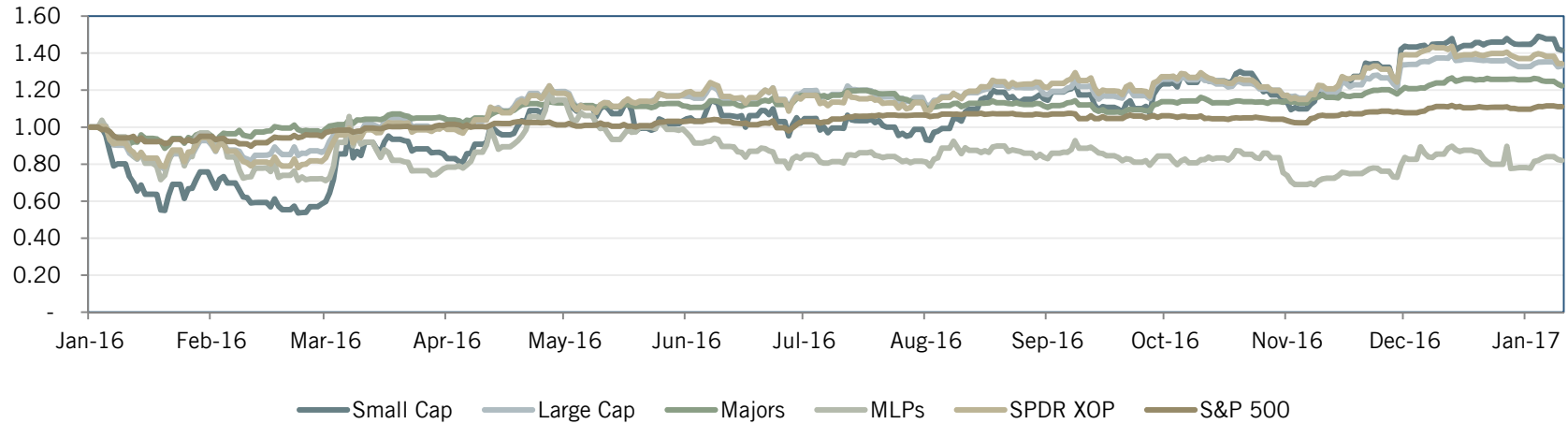
Source: Bloomberg as of 1/03/2017.

M&A Market Activity Continues to Accelerate – How About Q4 2016!

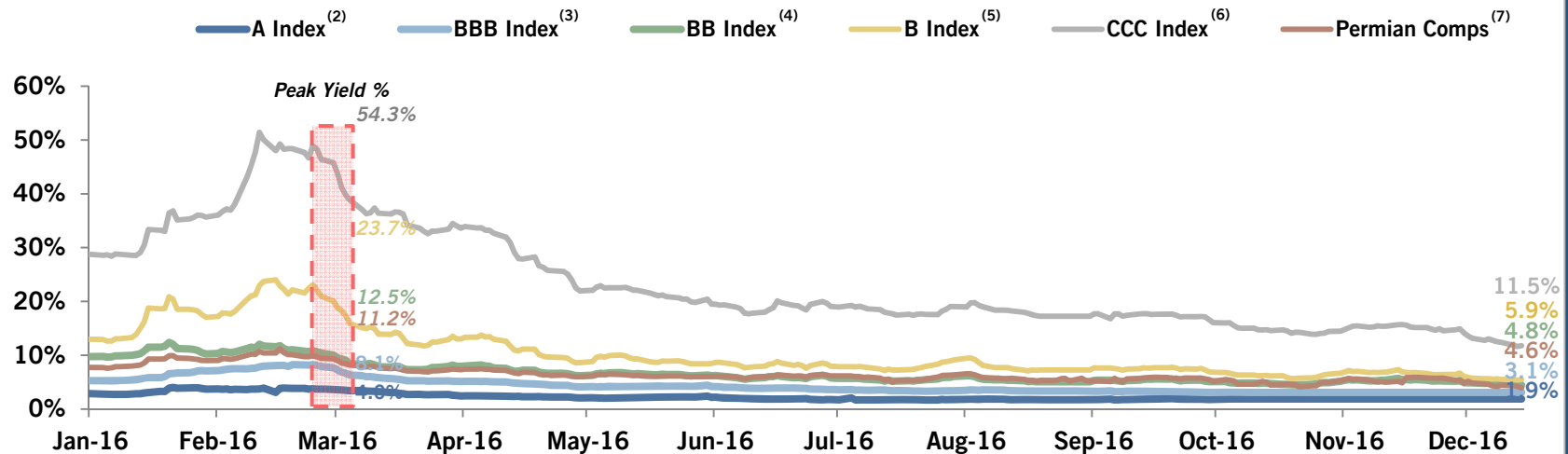
Date	Buyer	Seller	Amount (\$MM)	Location
1/3/17	 KKR		\$800	Eagle Ford
12/21/16		 	\$1,450	Marcellus Shale
12/14/16			\$1,850	SCOOP / STACK
12/14/16			\$2,400	Delaware Basin
12/13/16			\$615	Delaware Basin
12/12/16			\$292	Bakken
12/5/2016	Undisclosed		\$450	North Louisiana
11/21/2016			\$430	Delaware Basin
11/8/2016			\$299	Midland Basin
10/31/2016		J. Cleo / Multiple Sellers	\$1,765	Delaware Basin
10/31/2016			\$1,000	East Texas
10/25/2016		Multiple Sellers	\$683	Appalachia
10/24/2016			\$400	Eagle Ford, Austin Chalk
10/20/2016			\$360	Appalachia
10/18/2016			\$1,600	Midland Basin
10/18/2016			\$785	Bakken
10/14/2016			\$742	California
10/13/2016			\$2,400	Delaware Basin
10/3/2016			\$235	Permian Basin
9/26/2016			\$2,700	Appalachia, Barnett
9/12/2016			\$2,000	Gulf of Mexico
9/9/2016			\$420	Mid-Continent

Capital Markets Environment Continues to Improve

E&P Equity Index Performance



E&P Debt Performance ⁽¹⁾



Source: CapIQ as of 1/03/17.

(1) Yield indices illustrate weighted average yield based on size of issuance.

(2) A Index includes issues from COP and OXY.

(3) BBB Index includes issues from APA, APC, DVN, ECA, EOG, EQT, HES, MRO, MUR, NBL, PXD and XEC.

(4) BB Index includes issues from the following: AR, CXO, CLR, EGN, FANG, NFX, PDCE, QEP and SWN.

(5) B Index includes issues from the following: CRZO, CrownRock, GPOR, LPI, MRD, MTDR, OAS, RICE, RSPP, SM, SN, WLL and WPX.

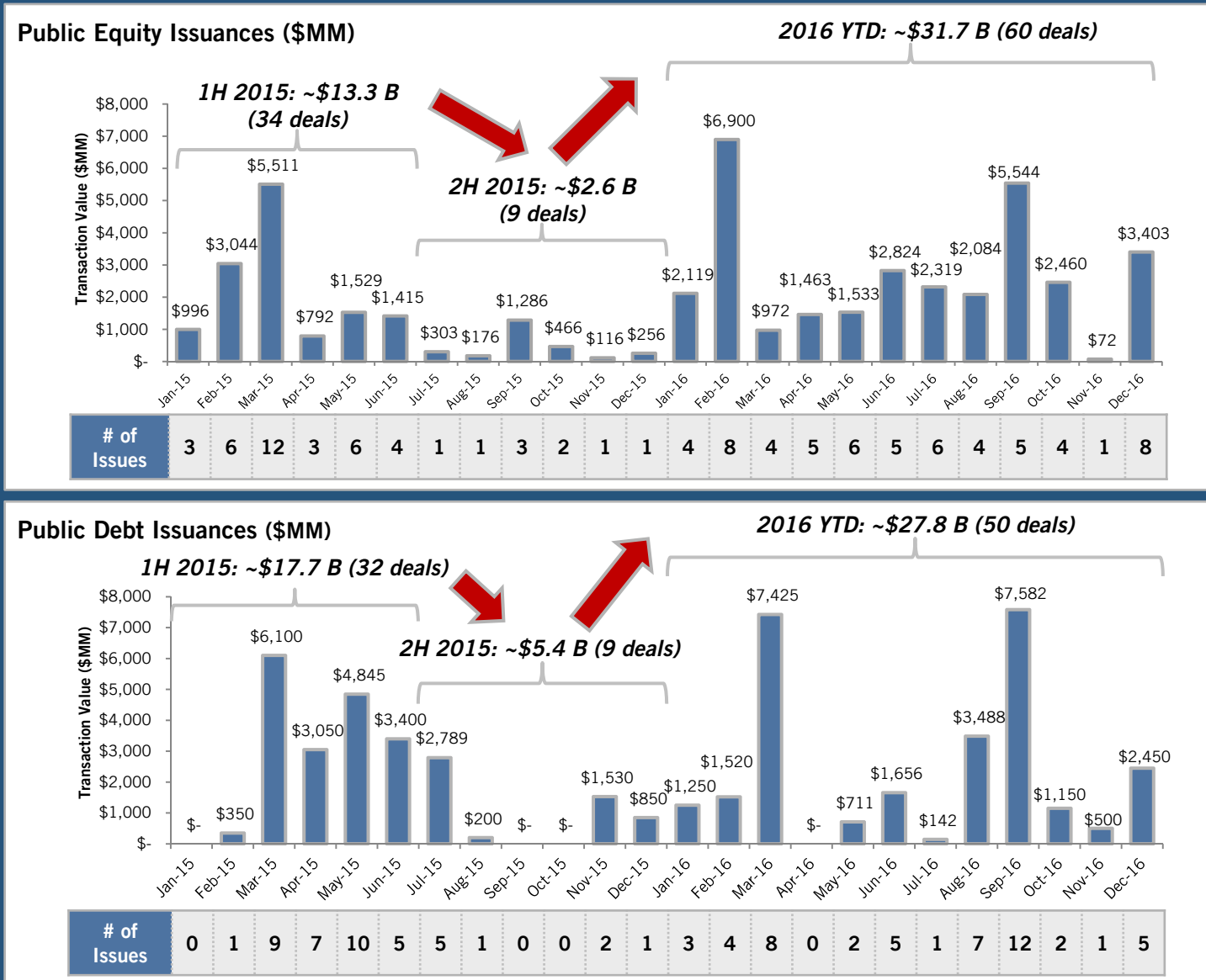
(6) CCC Index includes issues from the following: ALTA, AREX, BBG, CRC, CWEI, DNR, EVEP, LGCY, LNR and NOG.

(7) Permian comps include AREX, CPE, CXO, FANG, EGN, LPI, MTDR, PE, PXD, REI, CWEI and RSPP.

Jefferies

Upstream Public Market New Issue Activity

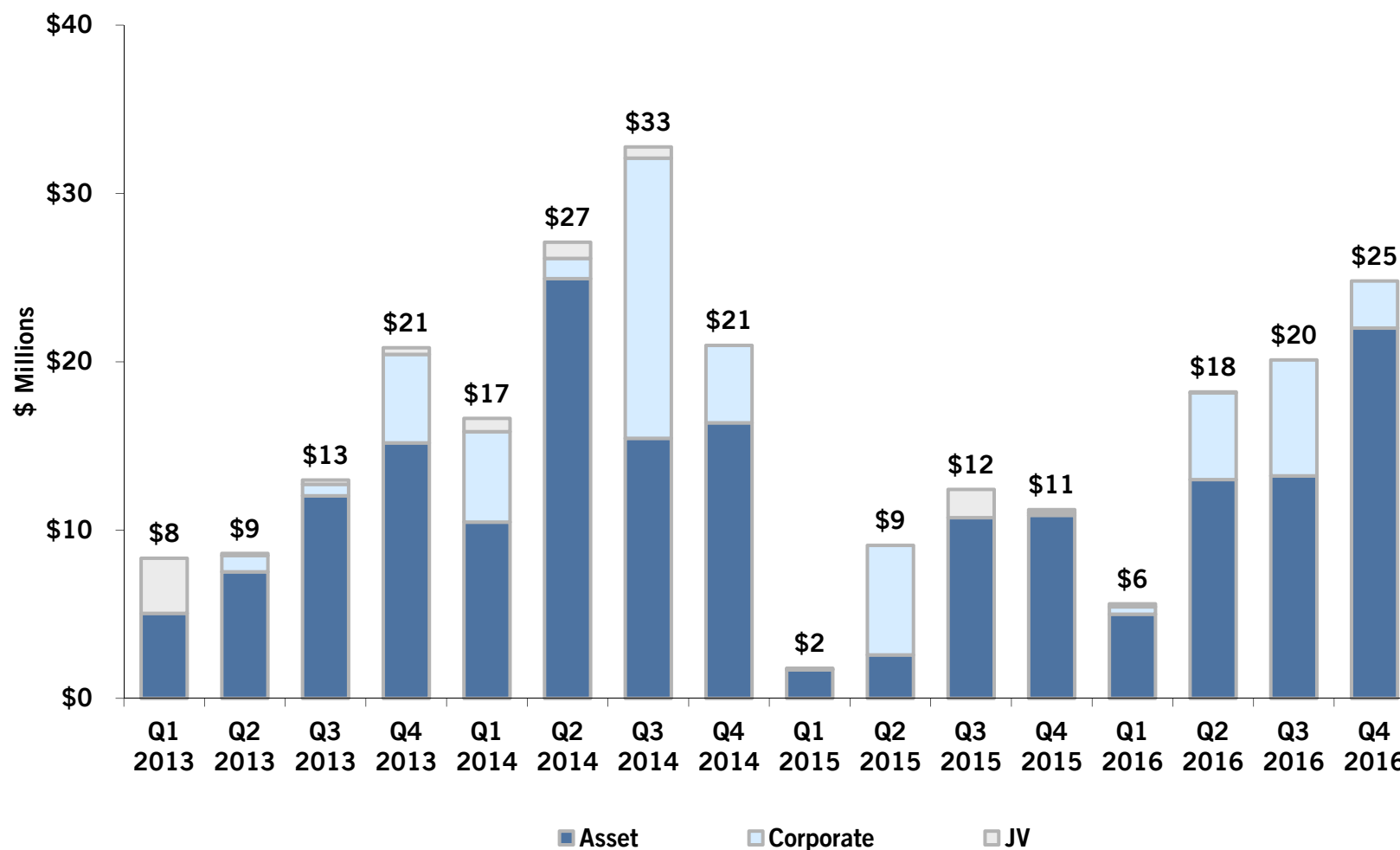
Equity and Debt Capital Markets Still Willing to Participate for High Quality Assets and Operators



Note: Analysis excludes private company issuances, private placements, and exchange offers.

Recent A&D Trends – Extremely Correlated to Oil Price Fall / Volatility

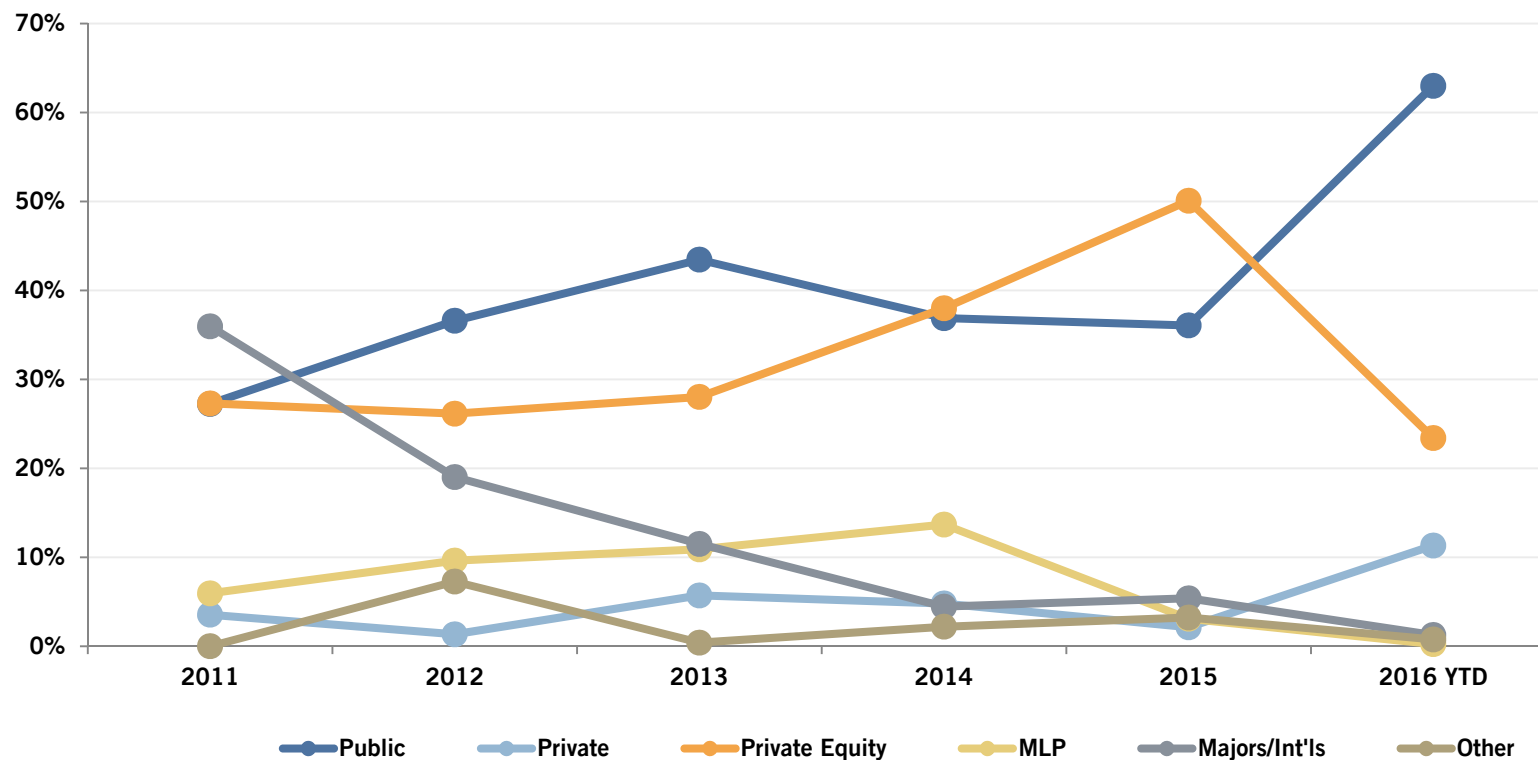
U.S. E&P Deal Volume Since 2013 (\$B)



Source: Jefferies internal transactions database.

First Half of 2016 Driven by Private Capital, Second Half Driven by Public Companies

Total E&P A&D Transactions by Buyer Type

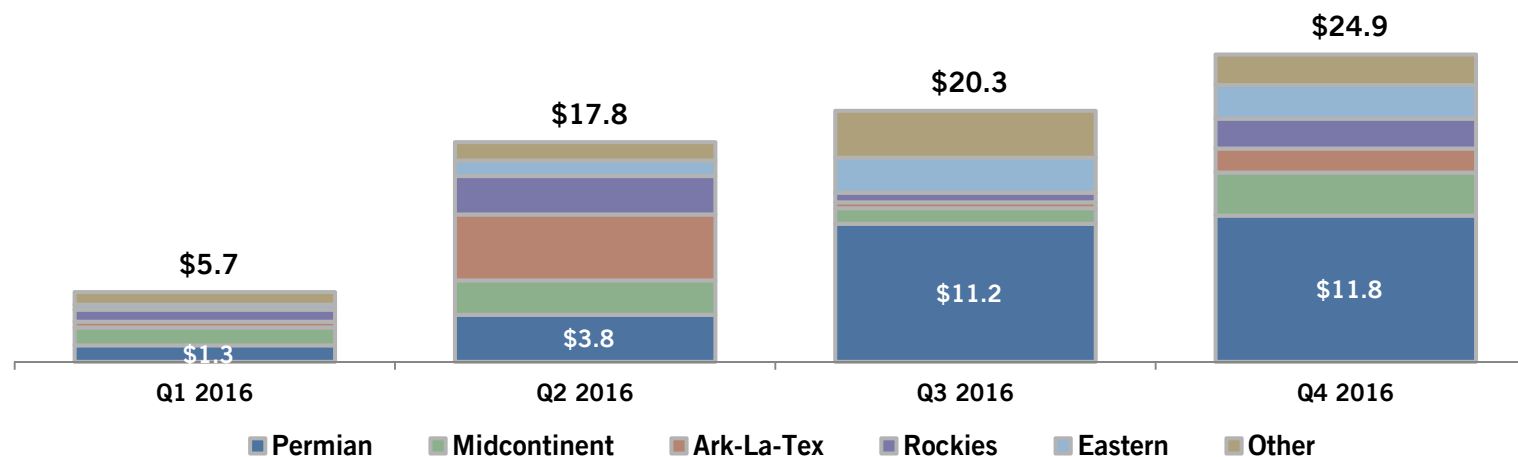


Source: Jefferies internal transactions database.

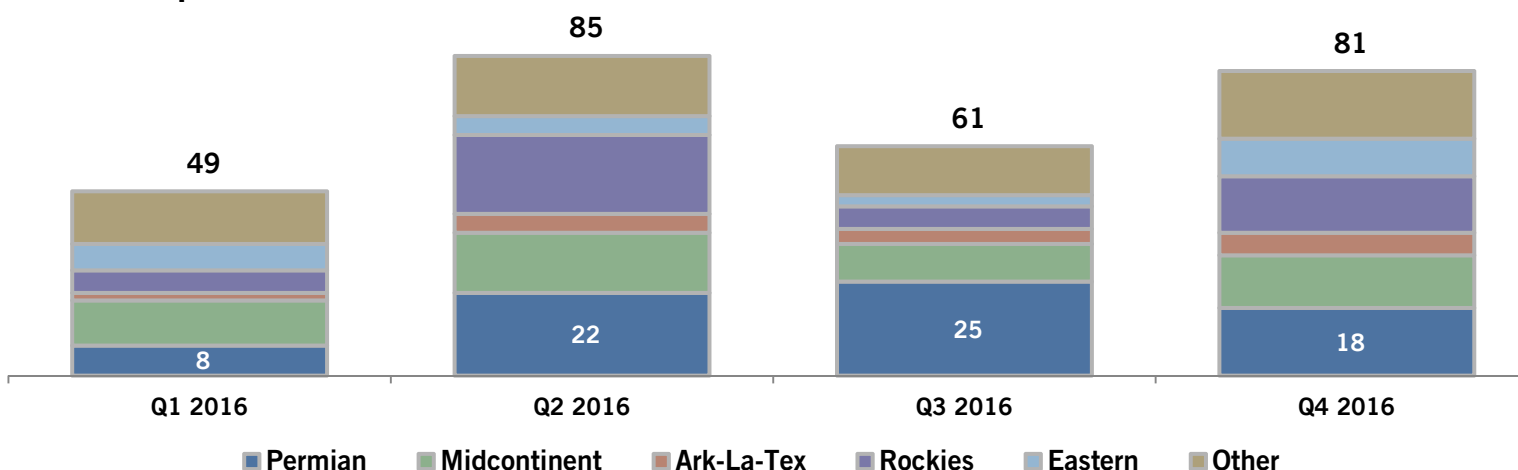
2016 U.S. Upstream M&A Transactions by Play

Permian Leads the Way

2016 U.S. Upstream M&A Transaction Volume (\$B)



2016 U.S. Upstream M&A Transaction Count



Source: PLS and public company filings.
 Note: "Other" category includes Alaska, Gulf Coast, Gulf of Mexico, Multi-Region and West Coast transactions.

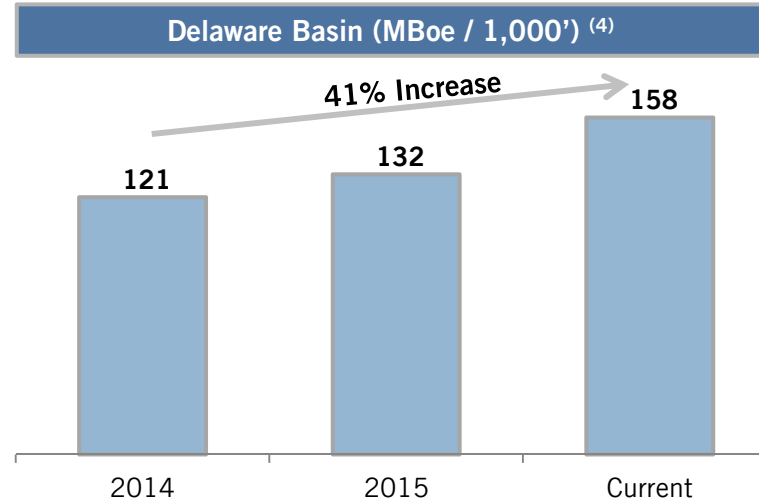
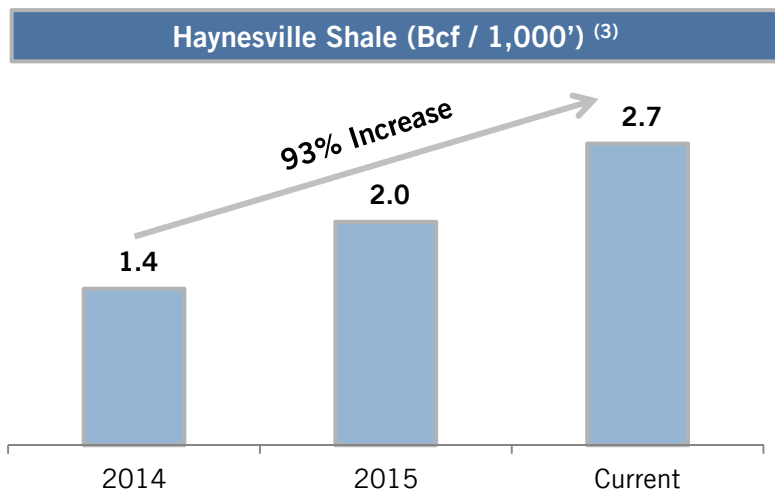
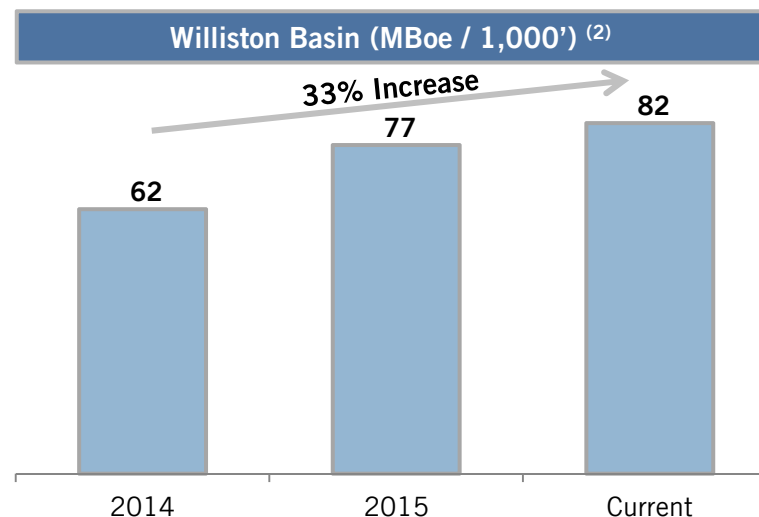
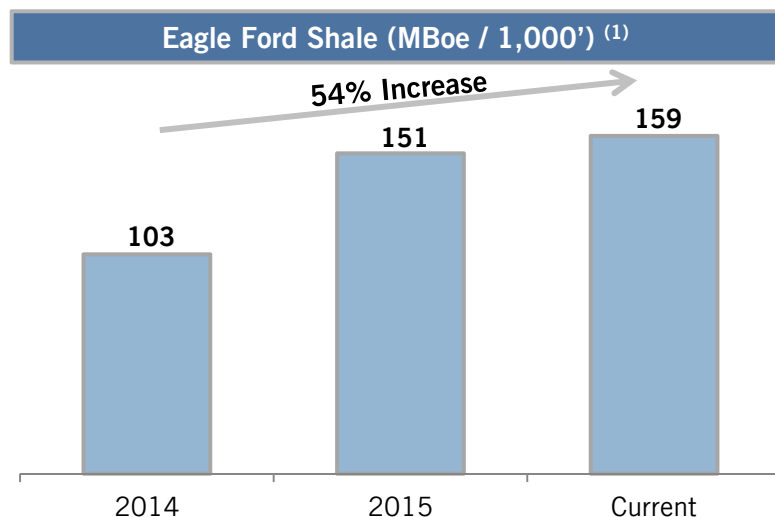
Three Themes – Single Play Bolt-on, New Core Area Diversification, or New Private Capital Backed

Rank	Date	Buyer	Seller	Size (\$MM)	Play	Consideration
1	May-16	Range Resources	Memorial Resource Development	\$ 4,400	Ark-La-Tex	Stock
2	Sep-16	Rice Energy	Vantage Energy	2,700	Marcellus	Cash and Stock
3	Sep-16	EOG Resources	Yates Petroleum	2,451	Delaware	Cash and Stock
4	Dec-16	Diamondback Energy	Brigham Resources	2,430	Delaware	Cash and Stock
5	Oct-16	RSP Permian	Silver Hill Energy	2,400	Delaware	Cash and Stock
6	Sep-16	Anadarko Petroleum	Freeport-McMoRan	2,000	Gulf of Mexico	Cash
7	Dec-16	Gulfport Energy	Vitruvian Exploration II	1,850	SCOOP/STACK	Cash and Stock
8	Oct-16	Occidental Petroleum	J Cleo Thompson, Permian Resources, Browning Oil	1,765	Delaware	Cash
9	Jul-16	Riverstone, Silver Run	Centennial Resource Development	1,735	Delaware	Cash
10	Aug-16	Concho Resources	Reliance Energy, Peregrine Petroleum	1,625	Midland	Cash and Stock
11	Oct-16	SM Energy	QStar	1,600	Midland	Cash and Stock
12	Aug-16	PDC Energy	Arris Petroleum, 299 Resources	1,505	Delaware	Cash and Stock
13	Dec-16	Alta Resources	Anadarko Petroleum	1,240	Marcellus	Cash
14	Oct-16	Castleton Commodities	Anadarko Petroleum	1,000	Haynesville	Cash
Total				\$ 28,701		

Source: PLS and public company filings.
Energy deal is either 1) Single play bolt-on, 2) New core area to diversify, 3) New private capital backed company.

Improvement in EURs for Selected Plays Drives Increasing Valuations

Normalized EUR Evolution



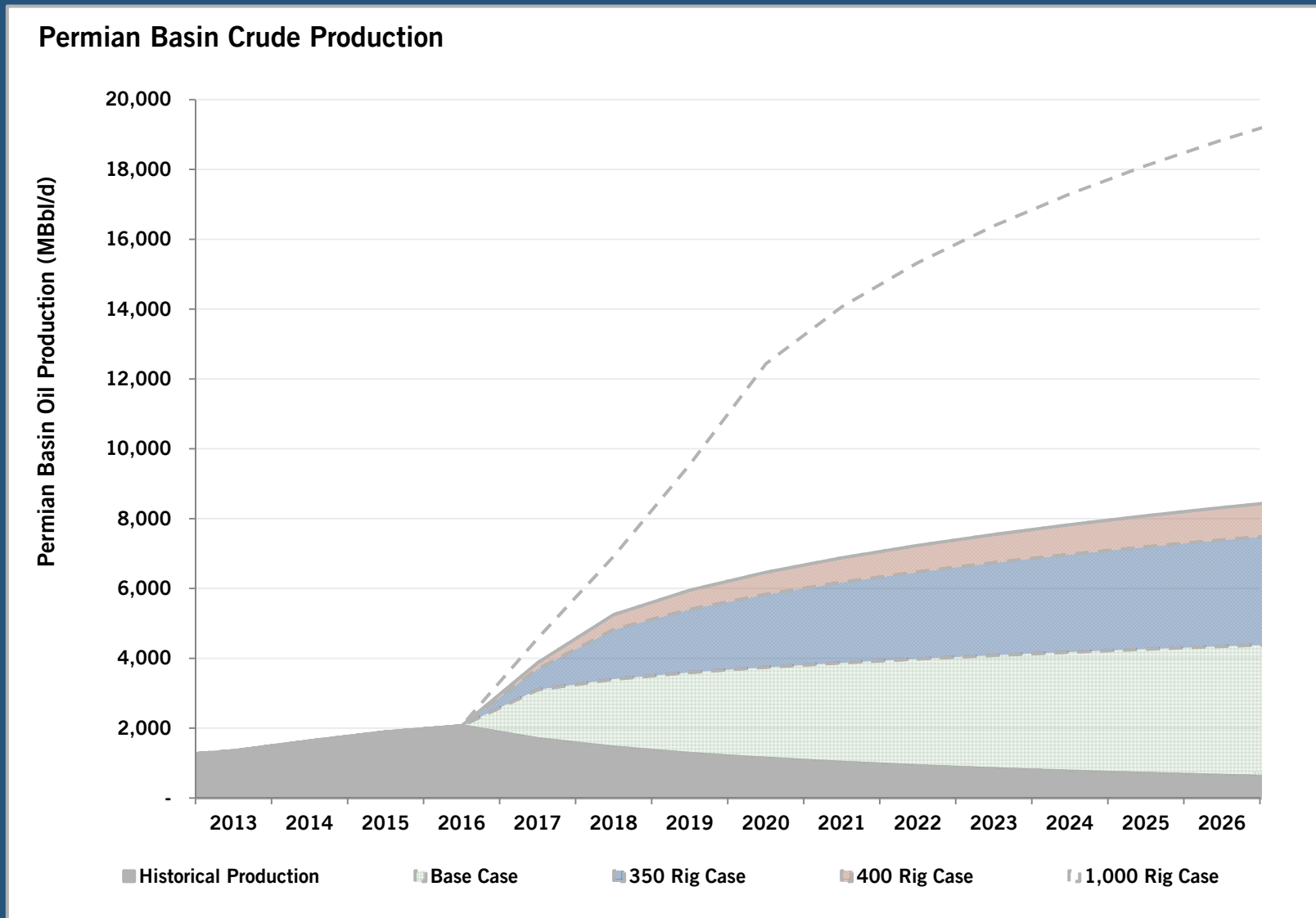
(1) Metrics include publicly available data from the following operators: CHK, CRZO, CWEI (Eastern Eagle Ford), ECA, EOG, EPE, MRO, NBL, PXD, SFY and SM. "Current" represents the most recent publicly reported data for each operator. Public disclosures represent Lower Eagle Ford completions. EURs represent type wells across all phase windows, including wet gas.

(2) Metrics include publicly available data from the following operators: CLR, HES, EOG, ERF, MRO, OAS, QEP, SM, WLL and WPX. "Current" represents the most recent publicly reported data for each operator. Public disclosures represent Middle Bakken and Three Forks completions.

(3) Metrics include publicly available data from the following operators: CHK, ECA and EPE.

(4) Metrics include publicly available data from the following operators: APA, APC, CWEI, CXO, EGN, EOG, MTDR, OXY, REN, WPX, XEC. "Current" represents the most recent publicly reported data for each operator. Public disclosures represent Bone Spring and Wolfcamp completions.

Forecasted Permian Basin Production



(1) Represents processed EUR.
 (2) As of 11/23/2016 per Baker Hughes International.

Permian Will Ultimately be Largest Producing Area in the World

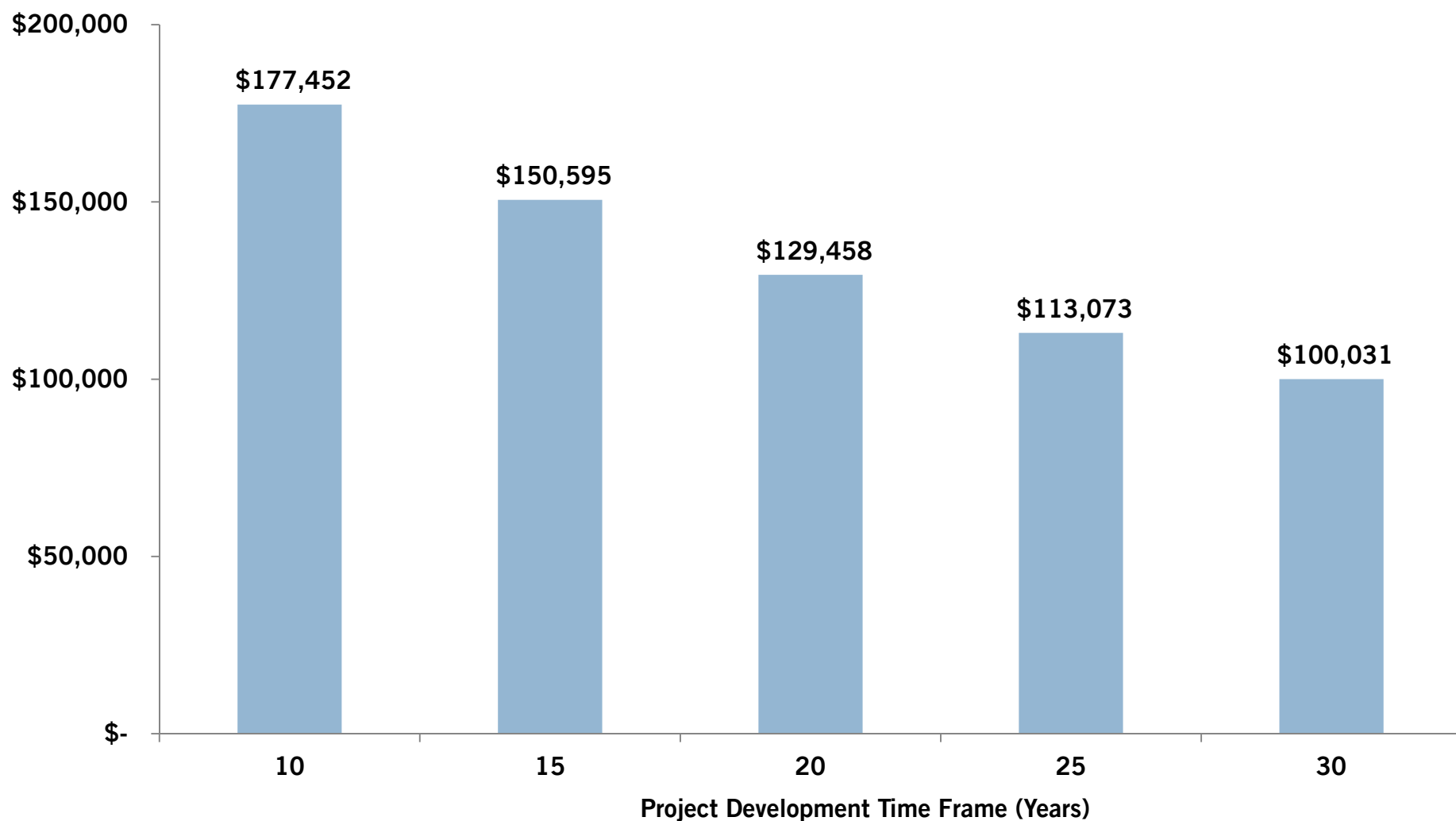
Total Core Surface Acreage	~7,700,000 acres
Total Core “Effective” Acreage	~20,100,000 acres
Productive Benches	5 (Delaware) 4 (Midland)
Assumed Spacing	8-15 wells / section
Number of Wells to Develop	~316,000 wells
Average EUR / Well	1,137 MBoe (730 MBo)
Total Recoverable Resource	~325 BBoe (~212 BBo)
Peak Oil Production (400 Rig Ramp)	~11,000 MBo/d
Oil Reserves Half Life (400 Rig Ramp)	~32 Years
Total Capital Needed	~\$1.9 Trillion

(1) Assumes development of 8 wells / section for the Wolfcamp A-XY Sand in southern Eddy County, NM and northern Loving County, TX.

What's a Permian Acre Worth?

Illustrative Example: 10,000 Acre Midland Basin Development Program











PV-15 @ NYMEX (\$ / Undeveloped Net Acre)⁽¹⁾



Note: Represents ~520 gross locations in the Middle Spraberry, Lower Spraberry, Wolfcamp A and Wolfcamp B across 10,000 net acres in Midland Co.

(1) Assumes NYMEX strip pricing as of November 28, 2016.

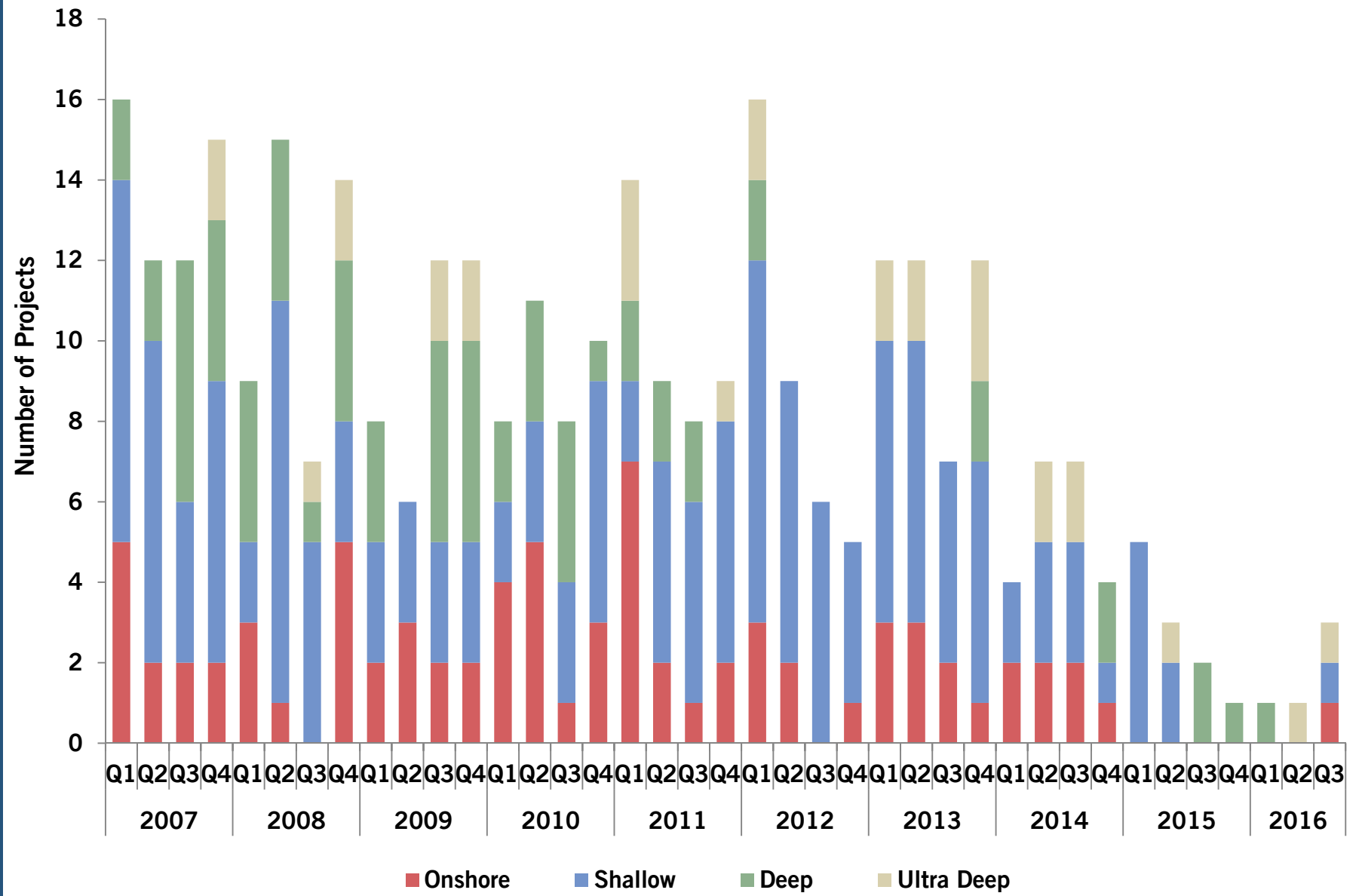
Top 10 Permian Operators

Operator	Net Acres	Current Production	Active Permian Rigs
	~2,000,000	~174 MBoe/d	10 rigs
	~1,700,000	~159 MBoe/d	5 rigs
	~1,500,000	~115 MBoe/d	10 rigs
	~1,400,000	~144 MBoe/d	8 rigs
	~710,000	~179 MBoe/d	17 rigs
	~705,000	~153 MBoe/d	18 rigs
	~560,000	NA	8 rigs
	~300,000	~67 MBoe/d	5 rigs
	~235,000	~50 MBoe/d	10 rigs
	~220,000	~86 MBoe/d	5 rigs
Top 10 Total	~9,330,000	~1,127 MBoe/d (35% of total)	96 rigs (36% of total)
Permian Basin Total		~3,250 MBoe/d⁽¹⁾	267 rigs

Note: Acreage includes non-core Delaware and Midland Basin, Central Basin Platform and New Mexico Shelf.

Source: Company filings and investor presentations, EIA and Baker Hughes.
 (1) Represents 2-stream production.

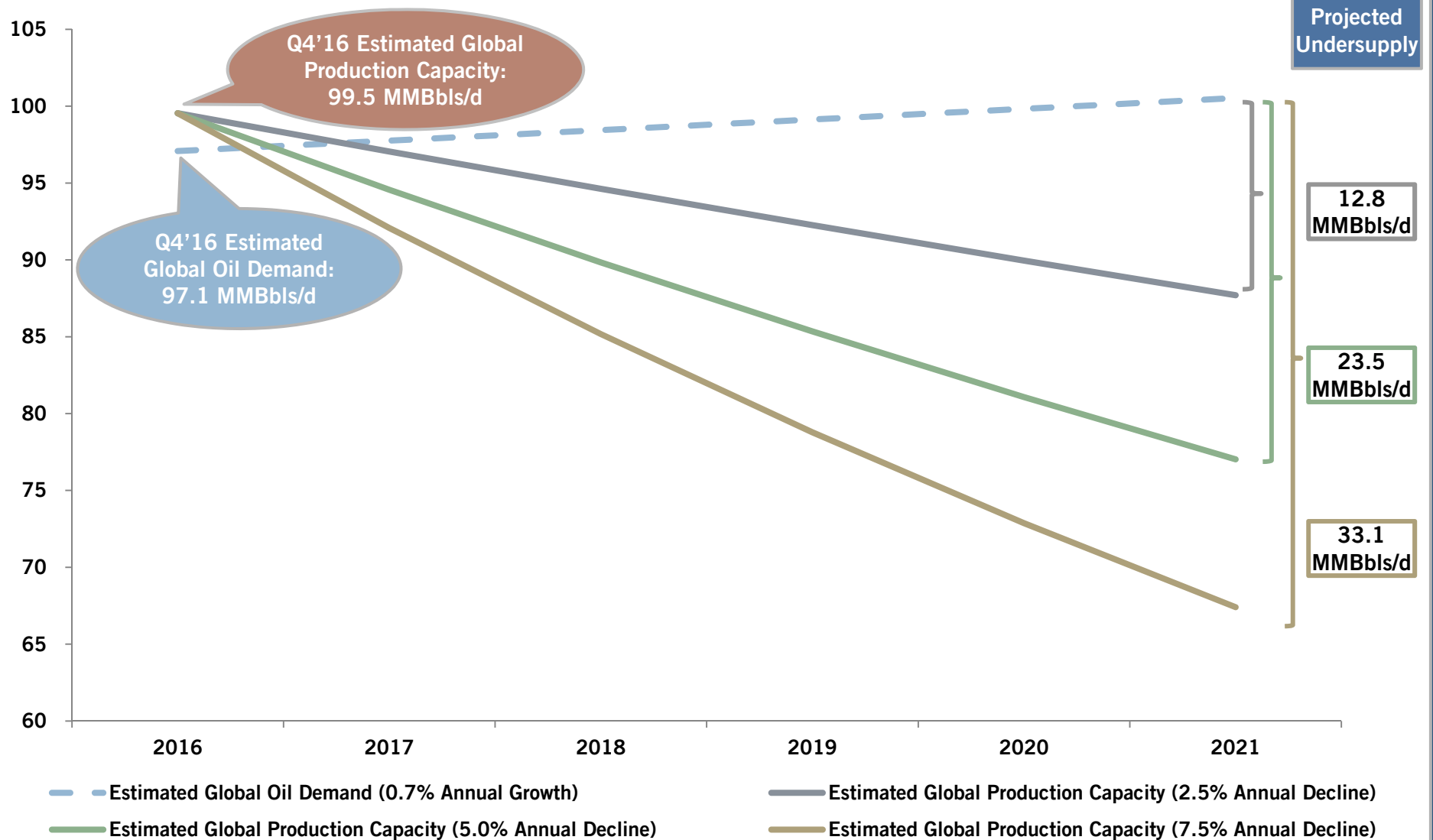
Declining Number of FIDs May Lead to Oil Supply Decrease



Source: Wood Mackenzie; global upstream data

Oil Supply Needed to Meet Future Demand

Projected Oil Supply / Demand Dynamics (MMBbls/d)



Source: ExxonMobil - The Outlook for Energy: A View to 2040 and IEA Oil Market Report, November 2016.

Closing Comments – Near Term Outlook

- Lots of attention on OPEC hanging together to help oil price. Can the various countries meet promises to cut production?
- Longer term fundamentals for higher oil price look attractive
- This phase of Permian deal flow is on the back half but there will continue to be a great deal of interest in all types of Permian
- Longer term outlook for Permian deal flow could include corporate deals
- Private capital markets will remain robust and will be increasingly flexible
- Public capital markets will be attractive if oil price holds
- Play economics will continue to improve with advancing technology
- Capital costs may have upward pressure because service companies need to be able to make some money
- Asset deal flow will be good in multiple plays, corporate deals could emerge