

November 17, 2016

## Global Oil Services, Drilling & Equipment

### 8<sup>th</sup> City of London Biennial Meeting 2016



Source: Maersk Group

#### MORGAN STANLEY RESEARCH

Morgan Stanley & Co. LLC

**Ole Slorer**

Ole.Slorer@morganstanley.com  
+1 212 761 6198

**Igor Levi**

Igor.Levi@morganstanley.com  
+1 212 761 3232

**Jacob Ng**

Jacob.Ng@morganstanley.com  
+1 212 761 5676

**Connor Lynagh**

Connor.Lynagh@morganstanley.com  
+1 212 296 8145

Morgan Stanley & Co. International PLC+

**Robert Pulleyn**

Robert.Pulleyn@morganstanley.com  
+44 20 7425 4388

**Jessica Alderson**

Jessica.Alderson@morganstanley.com  
+44 20 7425 0749

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## Total global spending by selected service segment (Capex +Opex)

[\$bn]	2006	2014	2015	2016E	2017E	2020E	15 vs. 14	16 vs. 15	17 vs. 16	CAGR [2006-20]	CAGR [2016-20]
<b>Well Related Services</b>	<b>109.4</b>	<b>269.0</b>	<b>195.9</b>	<b>157.5</b>	<b>170.1</b>	<b>246.8</b>	<b>-27.2%</b>	<b>-19.6%</b>	<b>8.0%</b>	<b>6.0%</b>	<b>11.9%</b>
Stimulation	19.8	68.9	44.1	31.3	36.6	63.5	-36.0%	-29.0%	16.8%	8.7%	19.3%
Completion	26.0	51.5	38.8	32.4	34.1	44.4	-24.6%	-16.4%	4.9%	3.9%	8.2%
Drilling Services	13.0	31.0	22.5	17.8	19.1	27.9	-27.5%	-20.7%	6.8%	5.6%	11.8%
Wireline	14.8	28.0	21.1	17.8	18.5	24.2	-24.3%	-15.9%	4.3%	3.6%	8.0%
Drilling Fluids	11.0	28.5	20.6	16.3	17.9	26.1	-27.6%	-21.1%	9.6%	6.3%	12.5%
Specialty Chemicals	7.2	18.7	15.3	13.2	13.8	19.5	-18.5%	-13.8%	4.4%	7.4%	10.3%
Drilling Tools	8.5	21.8	15.8	12.4	13.6	20.0	-27.6%	-21.3%	9.2%	6.3%	12.5%
Artificial Lift	9.0	20.5	17.6	16.2	16.6	21.3	-14.1%	-8.0%	2.5%	6.4%	7.0%
<b>Equipment Mfrs.</b>	<b>22.5</b>	<b>50.3</b>	<b>42.4</b>	<b>34.9</b>	<b>32.4</b>	<b>40.5</b>	<b>-15.7%</b>	<b>-17.7%</b>	<b>-6.9%</b>	<b>4.3%</b>	<b>3.8%</b>
Subsea Equipment	5.5	14.6	12.6	10.3	9.0	10.9	-13.4%	-18.3%	-12.6%	5.0%	1.3%
Subsea Services	2.5	6.1	5.7	5.1	5.3	6.6	-7.6%	-9.7%	4.3%	7.1%	6.7%
Rotating Equipment	6.6	13.2	10.9	8.8	8.1	10.3	-17.5%	-19.4%	-8.0%	3.2%	3.9%
Processing Equipment	7.8	16.3	13.2	10.6	10.0	12.7	-19.4%	-19.3%	-5.9%	3.5%	4.6%
<b>Offshore Drillers</b>	<b>44.4</b>	<b>62.9</b>	<b>55.5</b>	<b>42.9</b>	<b>41.5</b>	<b>53.2</b>	<b>-11.8%</b>	<b>-22.7%</b>	<b>-3.4%</b>	<b>1.3%</b>	<b>5.5%</b>
Floaters	27.0	41.9	36.2	26.5	24.8	32.9	-13.5%	-26.8%	-6.4%	1.4%	5.5%
Jackups	17.4	21.0	19.3	16.4	16.6	20.3	-8.3%	-15.0%	1.5%	1.1%	5.4%
<b>Land Drillers</b>	<b>21.1</b>	<b>51.0</b>	<b>34.3</b>	<b>27.2</b>	<b>31.1</b>	<b>48.8</b>	<b>-32.7%</b>	<b>-20.8%</b>	<b>14.3%</b>	<b>6.2%</b>	<b>15.7%</b>
Land Rigs	16.6	40.1	27.3	21.5	24.5	38.5	-31.9%	-21.2%	13.7%	6.2%	15.7%
Land Workover	4.4	11.0	7.0	5.7	6.6	10.2	-35.8%	-19.5%	16.6%	6.1%	16.0%
<b>EPCI</b>	<b>68.5</b>	<b>138.0</b>	<b>108.7</b>	<b>85.2</b>	<b>75.5</b>	<b>106.7</b>	<b>-21.2%</b>	<b>-21.6%</b>	<b>-11.4%</b>	<b>3.2%</b>	<b>5.8%</b>
Engineering	15.2	29.8	20.2	15.7	13.7	23.9	-32.3%	-22.2%	-13.0%	3.3%	11.1%
Construction	42.0	85.2	68.3	52.4	46.5	63.8	-19.8%	-23.3%	-11.3%	3.0%	5.0%
SURF	11.4	23.0	20.2	17.1	15.3	19.0	-12.1%	-15.2%	-10.5%	3.7%	2.6%
<b>OCTG</b>	<b>21.5</b>	<b>36.5</b>	<b>26.0</b>	<b>22.0</b>	<b>24.9</b>	<b>39.7</b>	<b>-28.8%</b>	<b>-15.4%</b>	<b>13.2%</b>	<b>4.5%</b>	<b>15.9%</b>
<b>Offshore Logistics</b>	<b>9.2</b>	<b>18.1</b>	<b>14.9</b>	<b>11.1</b>	<b>11.4</b>	<b>12.9</b>	<b>-18.1%</b>	<b>-25.3%</b>	<b>2.5%</b>	<b>2.5%</b>	<b>3.9%</b>
<b>Seismic</b>	<b>15.7</b>	<b>24.3</b>	<b>18.4</b>	<b>14.4</b>	<b>14.7</b>	<b>20.9</b>	<b>-24.4%</b>	<b>-21.7%</b>	<b>2.3%</b>	<b>2.0%</b>	<b>9.7%</b>
<b>Other</b>	<b>152.5</b>	<b>334.5</b>	<b>291.3</b>	<b>255.8</b>	<b>241.1</b>	<b>303.3</b>	<b>-12.9%</b>	<b>-12.2%</b>	<b>-5.8%</b>	<b>5.0%</b>	<b>4.4%</b>
<b>Total</b>	<b>464.8</b>	<b>984.6</b>	<b>787.3</b>	<b>651.0</b>	<b>642.6</b>	<b>872.8</b>	<b>-20.0%</b>	<b>-17.3%</b>	<b>-1.3%</b>	<b>4.6%</b>	<b>7.6%</b>

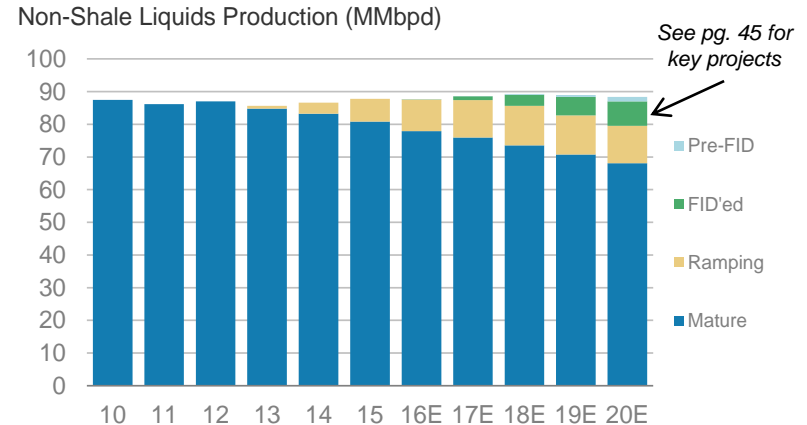
↓

Well Related Svcs.	157.5	24%
Equipment Mfrs.	34.9	5%
Offshore Drillers	42.9	7%
Land Drillers	27.2	4%
EPCI	85.2	13%
OCTG	22.0	3%
Offshore Logistics	11.1	2%
Seismic	14.4	2%
Other	255.8	39%
<b>Total</b>	<b>651.0</b>	<b>100%</b>

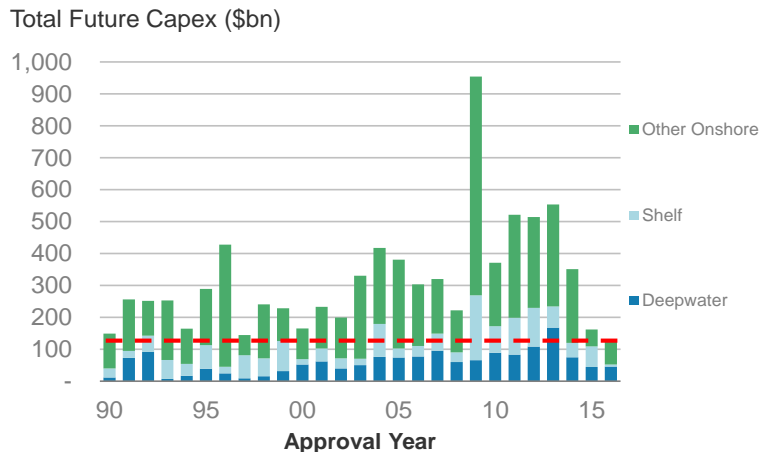
## Non-“shale” volumes relatively inflexible, deferrals setting up longer-term gap

- Oncoming volumes outside of the US are relatively visible based on already-sanctioned projects, and we believe will show minimal growth through the end of the decade.
- Meanwhile, 2015-16 has seen lower spending approvals than any time since the 1990s.
- Due to the long-cycle nature of large-scale projects, peak production is often not reached until 7-9 years down the line. Thus, **while FID deferrals today do nothing to change the current imbalance in the market, they are setting up a meaningful future shortfall from long-cycle volumes and increasing the “call” on short-cycle resources like NAm shale.**

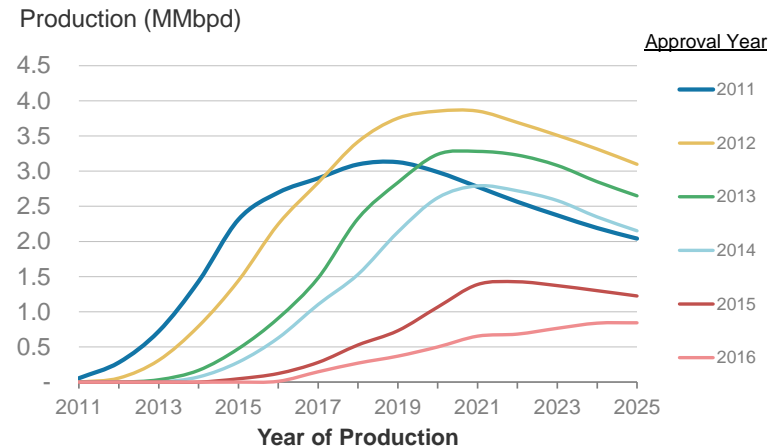
**Most non-shale production through 2020 has already been FID'ed, though ~7MMbpd of 2020 supply depends upon on-time startups of already sanctioned projects.**



**Meanwhile, the magnitude of new project approvals has dropped to levels not seen since the 1990s.**



**Deferred projects will likely set up a shortfall vs. “normal” new project volumes in 2020 and beyond.**



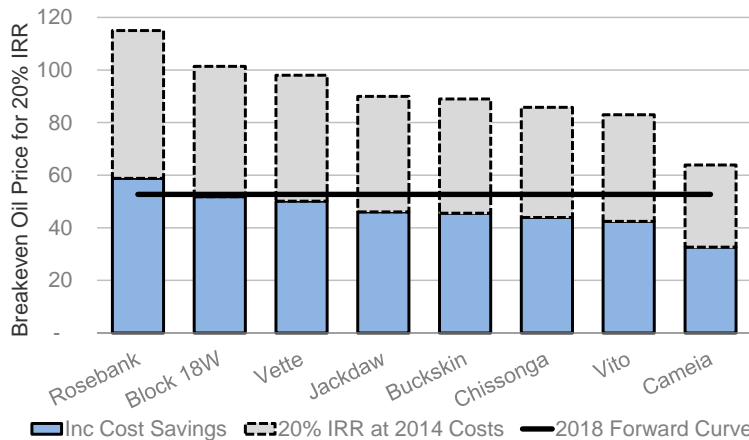
## Offshore industry could surprise to the upside as breakevens decline 50%

- Oil majors are providing cost data indicating that large deepwater projects could cost 35-55% less than expected
- Looking at a basket of major projects, breakevens have declined by ~50% from an average of \$91/bbl to \$46/bbl
- Small percentage of cost reductions for technology intensive subsea and well services driven by pricing
- Surprised by 6 large FIDs and 3 tie-backs YTD; latest data supports resurgence in FIDs through YE 2016/17
- Quest's reduced subsea tree award estimates suggest a 124% y/y growth in 2017 and a 15-25% CAGR thereafter
- Woodmac expecting up to 13 FIDs in the N. Sea, following just 2 in 2016

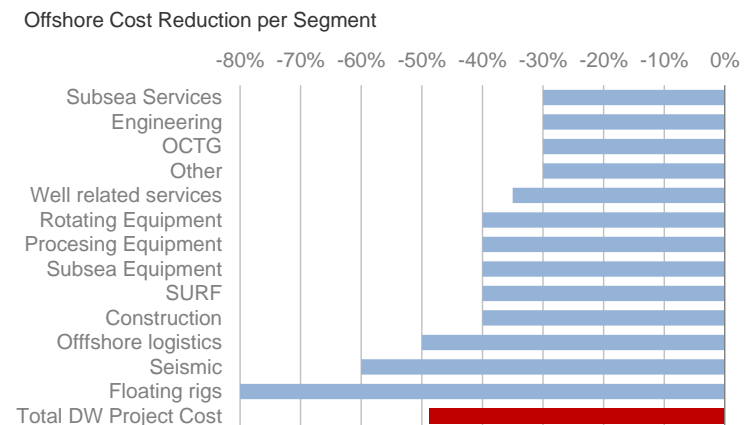
**Upstream cost index indicates a 27% decline from 2014 peak and 15% decline in 3Q16 y/y**



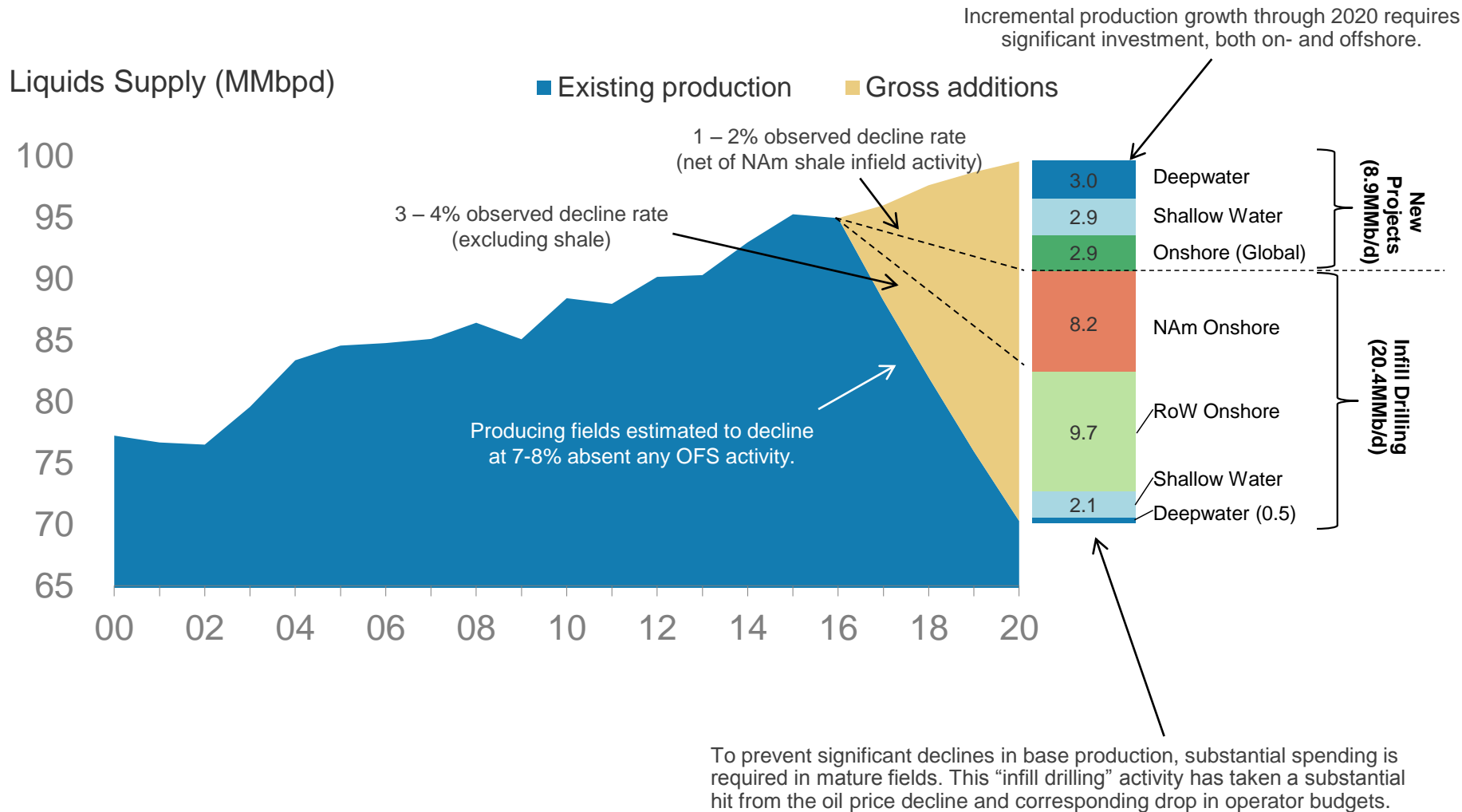
**Looking at a basket of deepwater projects, average breakevens have declined from \$91/bbl to \$46/bbl**



**Range of cost reductions across segments, with a small portion of subsea and well service costs due to pricing**



## Fighting the global decline curve

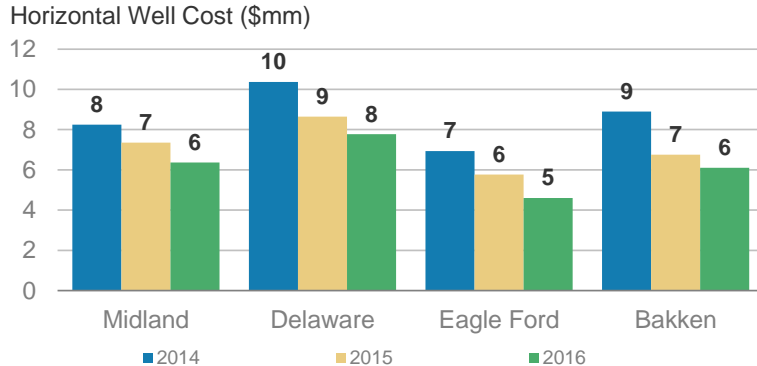


Source: Rystad Energy, Morgan Stanley Research estimates

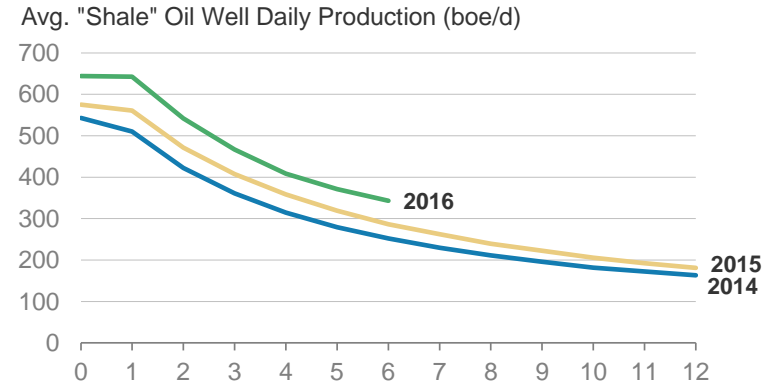
Note: We previously presented this analysis and others inside in a “crude only” format. We have changed our methodology to a “total liquids” methodology, consistent with EIA/IEA.

## The declining US unconventional cost structure: cyclical or structural?

US onshore unconv. well costs are down 20-30% from 2014, driven by efficiency and service cost reductions.

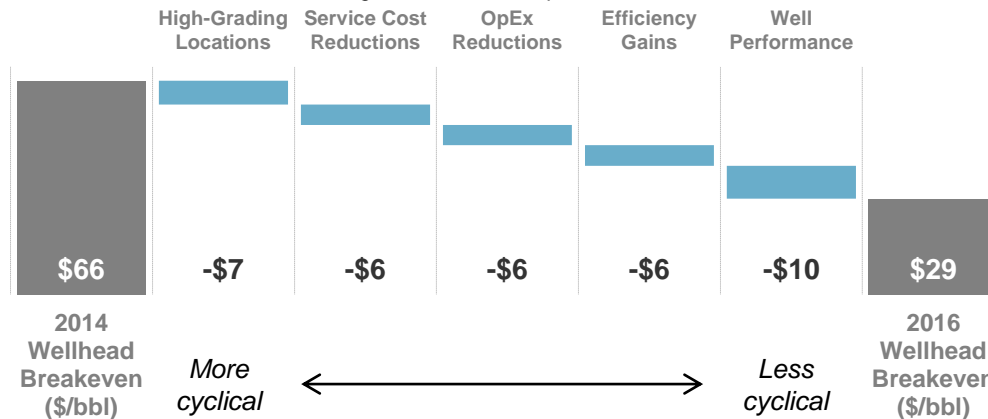


Meanwhile, well productivity is up, with the average oil well 20-30% more productive vs. 2014.



The sources of breakeven cost reductions vary in their cyclicity. Given a large enough activity increase, we believe most improvements are cyclical (including supply chain efficiency) – breakevens will therefore rise as activity increases, in our view.

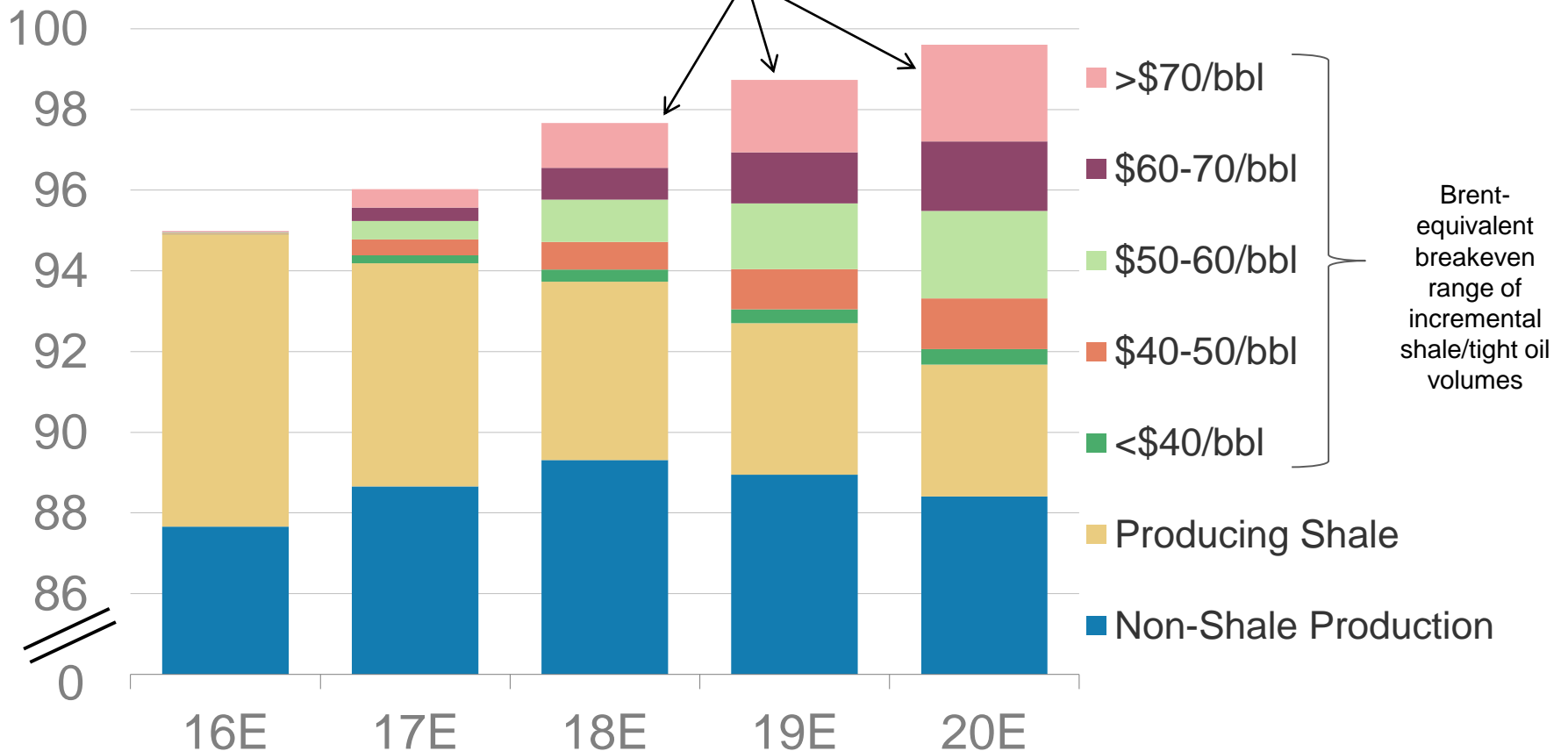
Illustrative wellhead breakeven change, select Bakken operator



## Shale is not uniform: average breakevens are less than those required to grow

### Liquids Supply (MMbpd)

Meaningful volume growth in 2018+ depends on development of assets with \$60/bbl+ breakeven prices



# Disclosure Section



## Disclosure section

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(as of October 31, 2016)

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	COUNT	% OF TOTAL	COUNT	% OF TOTAL IBC	% OF RATING CATEGORY	COUNT	% OF TOTAL OTHER MISC
Overweight/Buy	1142	35%	264	40%	23%	566	36%
Equal-weight/Hold	1431	43%	303	46%	21%	713	45%
Not-Rated/Hold	69	2%	7	1%	10%	9	1%
Underweight/Sell	665	20%	81	12%	12%	288	18%
<b>TOTAL</b>	<b>3,307</b>		<b>655</b>			<b>1576</b>	

Data include common stock and ADRs currently assigned ratings. Investment Banking Clients are companies from whom Morgan Stanley received investment banking compensation in the last 12 months.

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Equal-weight (E). The stock's total return is expected to be in line with the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

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## Disclosure section (cont.)

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COMPANY (TICKER)	RATING (AS OF)	PRICE* (11/11/2016)
<b>Ole Storer</b>		
Awood Oceanics Inc (ATW.N)	E (10/25/2016)	\$7.62
Baker Hughes (BHI.N)	++	\$58.64
Calfrac Well Services (CFW.TO)	E (04/16/2014)	C\$2.53
Carbo Ceramics (CRR.N)	U (09/29/2014)	\$7.03
Chart Industries (GTLS.O)	E (11/03/2015)	\$32.26
Core Laboratories NV (CLB.N)	O (10/28/2014)	\$103.55
Diamond Offshore (DO.N)	U (02/02/2015)	\$15.66
Dril Quip Inc. (DRQ.N)	E (10/28/2014)	\$50.45
ENSCO (ESV.N)	E (04/15/2016)	\$7.96
FMC Technologies (FTLN)	O (01/14/2013)	\$33.76
FMSA Holdings Inc (FMSAN)	O (05/26/2016)	\$8.30
Forum Energy Technologies Inc (FET.N)	E (10/28/2014)	\$19.05
Frank's International NV (FLN)	E (11/02/2016)	\$11.22
Gulfmark Offshore Inc. (GLF.N)	U (10/22/2014)	\$1.25
Halliburton Co. (HAL.N)	O (10/15/2014)	\$48.01
Helix Energy Solutions (HLXN)	O (03/16/2016)	\$9.46
Helmerich & Payne Inc (HP.N)	E (09/06/2016)	\$62.17
Hornbeck Offshore Services (HOS.N)	E (04/20/2016)	\$4.54
Independence Contract Drilling, Inc. (ICD.N)	O (09/02/2014)	\$4.67
McDermott International Inc. (MDR.N)	U (10/28/2011)	\$5.62
Nabors Industries Inc. (NBR.N)	O (03/04/2015)	\$12.58
National Oilwell Varco (NOV.N)	O (04/27/2016)	\$33.34
Noble Corporation (NE.N)	U (04/22/2015)	\$4.94
Nordic American Offshore Ltd. (NAO.N)	O (07/07/2014)	\$2.80
North Atlantic Drilling (NADL.N)	NR (04/22/2015)	\$2.67
Oceaneering International Inc (OIL.N)	E (10/28/2014)	\$23.40
Oil States International Inc. (OIS.N)	O (10/25/2016)	\$31.30
Pacific Drilling S.A. (PACD.N)	NR (01/27/2016)	\$3.13
Patterson-UTI Energy (PTEN.O)	O (07/15/2015)	\$22.00
Precision Drilling Corp (PDS.N)	O (04/16/2014)	\$4.24
Rowan Companies (RDC.N)	E (01/27/2016)	\$14.28
RPC (RES.N)	E (03/16/2016)	\$16.82
Schlumberger (SLB.N)	O (04/21/2008)	\$78.66
Seadrill (SDRL.N)	E (01/27/2016)	\$2.21
Seadrill Partners LLC (SDLP.N)	E (07/25/2016)	\$3.28
Superior Energy Services Inc. (SPN.N)	O (03/16/2016)	\$15.13
Tenaris S.A. (TS.N)	O (11/13/2016)	\$30.91
TETRA Technologies Inc (TTI.N)	O (08/10/2016)	\$5.28
Tidewater Inc. (TDW.N)	U (07/07/2014)	\$1.88
Transocean (RIG.N)	E (10/25/2016)	\$10.37
Transocean Partners LLC (RIGP.N)	E (07/25/2016)	\$11.84
Trican Well Service (TCW.TO)	E (01/27/2016)	C\$3.17
U.S. Silica Holdings, Inc. (SLCAN)	O (04/30/2013)	\$46.17
Weatherford International (WFT.N)	O (04/25/2014)	\$4.76

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\* Historical prices are not split adjusted.

**The Americas**

1585 Broadway  
New York, NY 10036-8293

**United States**

Tel: +1 (1) 212 761 4000

**Europe**

20 Bank Street, Canary Wharf  
London E14 4AD

**United Kingdom**

Tel: +44 (0) 20 7 425 8000

**Japan**

1-9-7 Otemachi, Chiyoda-ku  
Tokyo 100-8104

**Japan**

Tel: +81 (0) 3 6836 5000

**Asia/Pacific**

1 Austin Road West  
Kowloon

**Hong Kong**

Tel: +852 2848 5200