Anadarko Petroleum

Day 1 of Anadarko Week: Playing Chess While Peers Play Checkers; 10 Factors That Support Our Bullish Stance

Overweight

APC, APC US

Price: $63.03

▲ **Price Target: $72.00**
Previous: $70.00

Large Cap Oil & Gas Exploration & Production

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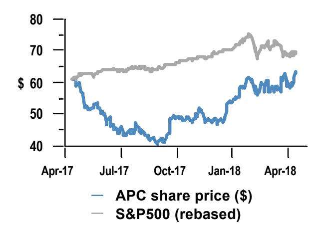
Price Performance



	YTD	1m	3m	12m
Abs	15.1%	7.7%	6.9%	3.2%
Rel	16.6%	11.6%	11.6%	-10.9%

JPM View: Welcome to Anadarko Week. During this eponymous week, we are publishing a series of deep dive reports on the story, which will culminate with an investor conference call with APC's Chairman and CEO Al Walker on April 20 at 11am (ET)[1]. On day 1 of Anadarko Week, we set the table with our investment thesis and 10 factors why we believe APC is poised to outperform the peer group in 2018. Despite the improvement in near-term fundamentals in the oil market, the back-end of the oil curve remains stubbornly range bound in the $55 to $60 per bbl range. Against this backdrop, the idea of FCF generation and disciplined capital allocation is becoming increasingly important as investors look for names that can deliver value through the cycle. In our view, APC is well positioned for this shift in investor attitude toward the sector given its long-term capital allocation philosophy of investing within organic cash flow and improved margin profile following successful portfolio management. Ahead of this shift in investor sentiment, APC began an active portfolio management process in 2015, which included the jettisoning of $7.0 billion of lower margin natural gas weighted assets and contrarian purchase of $2.0 billion of deepwater GoM assets from a motivated seller at less than 2.0x cash flow. These strategic moves along with the company's franchise assets in the DJ and Delaware Basins have positioned APC to deliver double digit oil growth through at least 2020, while returning significant cash to investors, which we see as the recipe for success for large cap diversifieds. We raise our 12-month target price to $72 from $70 to incorporate our updated estimates at the strip, which implies 5.6x our 2019E EBITDA and parity with our revised NAV.

- **Factor 1—Returning significant cash back to shareholders, while delivering value added oil growth.** Since 2017, a common characteristic of upstream winners have been companies that have successfully transitioned to FCF stories or executed balanced capital allocation programs. We continue to believe this theme has legs and could continue to differentiate the stocks, particularly the large caps. Based on our updated modeling at the strip, we see potential for APC to return more than $6.5 billion to shareholders between 4Q17 and the end of 2020 inclusive of the $1.00/annum dividend. We believe APC could announce a further increase in its buyback authorization that currently stands at $3.0 billion in 2H18 if solid oil price fundamentals hold.

[1] On January 3, 2018, MIFID II came into effect. Therefore, you may only be eligible to participate in this conference call if you have the appropriate level of access to J.P. Morgan research. Please check your eligibility before participating/accessing.

Anadarko Petroleum Corporation (APC;APC US)

FYE Dec	2015A	2016A	2017A	2018E *(Prev)*	2018E *(Curr)*	2019E *(Prev)*	2019E *(Curr)*
Adjusted EPS ($)							
Q1 (Mar)	(0.72)	(1.12)	(0.60)	0.32	0.32	0.51	0.67
Q2 (Jun)	0.01	(0.60)	(0.77)	0.40	0.46	0.36	0.49
Q3 (Sep)	(0.70)	(0.89)	(0.77)	0.45	0.53	0.33	0.44
Q4 (Dec)	(2.46)	(0.49)	0.20	0.54	0.63	0.46	0.55
FY	(3.88)	(3.07)	(1.96)	1.70	1.93	1.66	2.14
Bloomberg EPS FY ($)	-2.49	-3.05	-2.04	-	1.65	-	1.74

Source: Company data, Bloomberg, J.P. Morgan estimates.

Company Data	
Price ($)	63.03
Date Of Price	13 Apr 18
52-week Range ($)	63.72-39.96
Market Cap ($ mn)	32,481.12
Fiscal Year End	Dec
Shares O/S (mn)	515
Price Target ($)	72.00
Price Target End Date	31-Dec-18

See page 31 for analyst certification and important disclosures.

- **Factor 2—Despite YTD outperformance, APC remains one of the most attractively valued stocks under our sustaining FCF analysis**: In 2017, we observed how the singular focus on NAVs was no longer being valued the same way in the market, while companies with more balanced FCF generation and capital allocation were outperforming. With our Integrated Oils analyst Phil Gresh, we introduced an investing framework that ranked producers on sustaining FCF generation, balance sheet strength, and capex discipline. Our methodology includes the comparison of our CFO estimates through 2021 to our estimates of the level of capex required to maintain flat production, which we define as "sustaining FCF." Despite APC's 18% outperformance relative to the peer group on a year-to-date basis, APC remains one of the most attractively valued stocks under our sustaining FCF yields, trading at 2019 and 2020 sustaining FCF yields of 12.9% and 13.8% versus the group at 8.0% and 9.1%, respectively.

- **Factor 3—"Core of the core" position in the Delaware Basin. Recent M&A transaction shines spotlight on the value of APC's rocks in the northern Delaware Basin.** Based on our analysis of state data, the Delaware Basin is delivering the most productive oil wells in U.S. shale adjusted for lateral lengths (see Figure 18). APC's 240K net acreage position is concentrated in the core of the play in Loving, Reeves, and Ward Counties. As illustrated in Figure 20, oil well productivity as measured by average 6-month oil IP's in Loving, Reeves, and Ward were second, third, and fourth highest in the basin after Lea County (Loving, Reeves, and Ward 6-month oil IP's per 1,000 ft. of lateral were 103 Bo/d, 98 Bo/d, and 94 Bo/d, respectively). We value APC's undeveloped leasehold at $40K per acre, which is consistent with the average transaction value of $37K per acre in the Permian Basin since mid-2016. However, one of the shrewdest operators in the Delaware Basin, Concho Resources (CXO), announced a $9.5 billion merger announcement for RSPP at a valuation of $76K per acre. RSPP's assets included 92K net acres (47K in Midland and 45K in Delaware) in the Permian Basin. As illustrated in Figure 22, APC's Delaware Basin acreage position directly offsets RSPP in Loving County. Despite having an undrilled inventory of ~21K gross locations, CXO indicated that RSPP's undrilled locations would move to the front of the line in terms of quality. We believe APC's Delaware Basin position should support attractive full cycle returns as the company's average entry cost was only ~$1K per acre.

- **Factor 4—Completion of Delaware Basin infrastructure poised to unlock significant growth similar to what occurred in DJ Basin in early 2014.** When assessing 2017 Delaware Basin well productivity by operator, APC's results were in the bottom quartile (see Figure 25). In our view, this reflected the fact that the company was engaged in operatorship capture and had limited infrastructure in place to support optimized well completions. As highlighted in the company's 2018 guide, APC's Delaware Basin volumes will be relatively flat until the regional oil treating facilities (ROTFs) in Reeves and Loving are completed over the summer. In total, APC and Western Gas will complete the construction of 120 MBo/d of oil treating facilities in Reeves and northern Loving in 2018, which should support an inflection point to production growth in 2H18. We see potential for a similar impact to APC's Delaware Basin volumes to what occurred in 1H14 in the DJ Basin when APC brought on-line its Lancaster cryogenic facility as well as additional field compression. Between

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4Q13 and 4Q14, APC's DJ Basin volumes surged 67%, or 78 MBoe/d, to 195 MBoe/d.

- **Factor 5—Optimized completions in the DJ Basin should support more capital efficient growth.** In 2017, the bulk of APC's shorter and mid-lateral length wells utilized a new completion design. In Figure 27, we plot cumulative production from APC's DJ Basin completions online since January 2017. As a whole, the company's program on a lateral length adjusted basis is trending consistent with the company's 690 MBoe type curve. That said, note the number of completions with limited production history (i.e., less than 4 months) that are substantially outpacing the company's 690 MBoe type curve. In 2018, we expect APC to apply its new completion design to extended reach laterals, which could provide upside if successful as the company's DJ Basin production forecast only bakes in historical performance for extended reach laterals.

- **Factor 6—Attractive mix of conventional and unconventional assets should support strong FCF.** We believe APC's reshaped asset base through active portfolio management has an optimal mix of stable conventional production (low sustaining capex and high margins) and unconventionals (high growth rates from DJ and Delaware Basins) to deliver attractive debt adjusted growth and significant free cash flow. As illustrated in Figure 28 and Figure 29, we anticipate significant FCF generation from the company's conventional international assets in Algeria and Ghana. On a combined basis, we are forecasting an average of more than $650 MM per annum in FCF generation on an after tax basis over the next four years, or $2.7 billion in total. Importantly, APC's overall production from Ghana and Algeria should be relatively flat over this time period (modest growth in Ghana offsetting natural field declines in Algeria). Meanwhile, we see approximately $1 billion per annum in FCF from the GoM.

- **Factor 7—Upside potential from the TEN field in Ghana.** A potential near-term catalyst for APC is the restart of drilling activity at the TEN field in Ghana following the resolution of a border dispute by a favorable ITLOS ruling in 2017. At the time of the suspension of drilling activities, the TEN consortium led by Tullow had completed 11 of the 24 wells planned at the field. In 2017, gross production at the TEN field averaged 56 MBo/d vs. nameplate capacity of 80 MBo/d. Tullow has guided to 2018 gross production of 64 MBo/d, which is 7% higher than JPMe at 60 MBo/d. There appears to be potential upside to volume forecasts as production has consistently eclipsed 70 MBo/d over the past few months and Tullow recently spudded a key development well at the Ntomme field, which could support upside to Ghana volumes. As a reminder, APC owns a 19% interest in the TEN complex.

- **Factor 8—Option value at Mozambique LNG.** APC appears to be making tangible progress on the Mozambique project with the completion of the legal and contractual framework, onsite preparation work, and agreements on 5.1 MMtpa of volumes (APC needs ~8.5 MMtpa to move forward with project financing). Given improving supply-demand conditions in the global LNG market and current negotiations with multiple buyers underway, APC could fill its remaining volumes necessary for project financing by year-end 2018. Including project financing and its 26.5% working interest, APC estimates $2.0 billion in equity cash outflows during the four-year estimated construction period. Management recognizes the market's ambivalence toward the project given the company's size and significant cost overruns reported by industry over the past LNG building cycle, but believes the combination of world-class reservoir quality, the proximity of the Golfinho/Atum fields to shore, and the sharing of common facilities with the XOM led Area 4 consortium should partially mitigate the inherent risk of this project. APC views Mozambique as an attractive longer dated project that provides long-term visibility to the story, while not detracting from the company's unique cash return story given the measured level of investment during the construction phase of the project.

- **Factor 9—Management is focused on narrowing perceived valuation discrepancy associated with strategic ownership of Western Gas.** Management believes its ownership of the Western Gas MLP is under-appreciated by the market and believes it can narrow this perceived valuation discrepancy by clearly demonstrating to the market the uplift to APC's recurring cash flow profile from the WGP/WES entities. The company is evaluating several options to help enable this multi-billion dollar valuation discount to narrow through improved liquidity. Importantly, management sees this challenge as solvable and is seeking a solution that is best for APC, while preserving value for the MLP.

- **Factor 10—Upside to consensus oil and cash flow forecasts.** We are forecasting 2018 and 2019 oil production of 388 MBo/d and 444 MBo/d, respectively, which is 1% and 4% above consensus forecasts driven by strength in the company's U.S. onshore portfolio and the TEN field in Ghana. Our revised 2018 and 2019 EPS/CFPS estimates are \$1.93/\$12.24 and \$2.14/\$14.02 from \$1.70/\$11.98 and \$1.66/\$13.48. Our 2018 and 2019 cash flow estimates are 6% and 10% above consensus. We raise our 12-month target price to \$72 from \$70 per share, which assumes 5.6x our 2019E EV/EBITDA and is at parity with our revised NAV at the strip.

Anadarko Deep Dive Analysis

Active portfolio management has simplified portfolio and boosted margins

In 2015, APC began a portfolio transformation process designed to boost its margins, oil weighting, and simplify the upstream portfolio. The existing portfolio at that time was overly complex given its diversified exposure to so many plays in the U.S., including several dry gas assets. From a position of strength, APC targeted domestic assets outside of its new core as candidates for monetization as management looked to take advantage of a strong A&D market in 2016 characterized by buyers willing to pay valuations well above PDP reserve values at the strip. As illustrated in Table 1, APC executed $7.0 billion in asset sales of mostly tier 2 and/or natural gas focused assets.

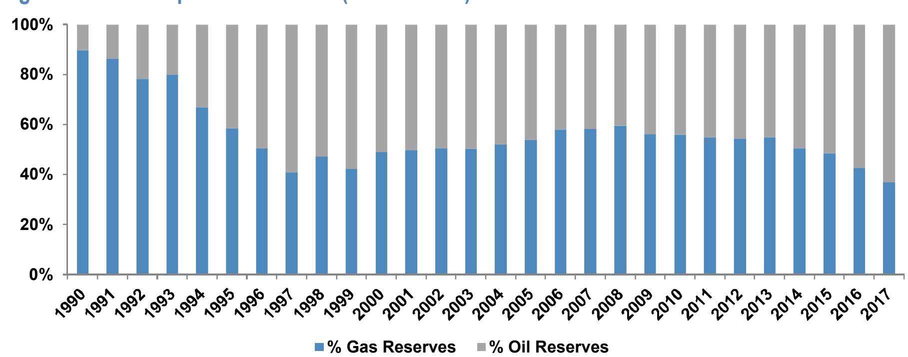
Table 1: Active Portfolio Management

Date	Buyer	Asset	Amount
4/1/15	Unnamed Buyer	EOR Assets in Wyoming	$675
7/6/15	Unnamed Buyer	Freestone and Dew Pinnacle Assets in E Texas	$425
7/30/15	Carbon Creek Energy	PRB CBM Assets in Wyoming	$154
6/30/16	Unnamed Buyer	West Texas Ozona Field	$138
6/30/16	Unnamed Buyer	Wyoming East Texas & Louisiana Assets	$107
9/30/16	Unnamed Buyer	Wamsutter Assets in Wyoming	$588
11/18/16	Castleton Commodities	Carthage upstream and midstream assets	$1,000
12/21/16	Alta Resources Development	Marcellus Shale/PA	$1,240
1/12/17	Multiple acquirers	Eagle Ford Shale assets in South Texas	$2,100
5/11/17	WildHorse	Eaglebine assets in SE Texas	$533
Total:			**$6,960**

Source: J.P. Morgan estimates, Bloomberg.

The asset sales not only meaningfully improved the balance sheet, but also drove a significant decrease in the company's natural gas mix (see Figure 1).

Figure 1: APC's Liquids vs. Gas Mix (1990 to 2017)

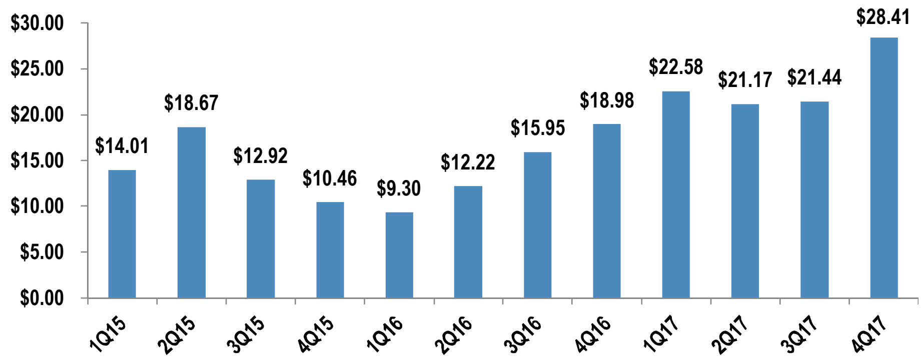


Source: Company reports, J.P. Morgan Research estimates.

In September 2016, APC announced a contrarian $2.0 billion acquisition of deepwater assets from Freeport McMoRan. The acquired assets included ~80 MBoe/d of production (80% oil), 3 operating facilities, and several exploration and tieback prospects. Through the transaction, APC nearly doubled its GoM production to ~155 MBoe/d (85% oil). The key asset acquired was a 25% working interest in Lucius, which increased APC's working interest to 49%. APC acquired the deepwater oil and gas assets for only ~1.5x 2017 EBITDA and 21K per flowing Boe, significant discounts to its pre-transaction multiples of 9.0x and 64K per flowing

Boe, respectively. It appears that APC essentially was able to purchase the assets for the value of the proven reserves and low risk tieback opportunities only. Under the 2016 strip at the time, management estimated ~$3.0 billion of free cash flow from the assets over the next five years. The transaction closed in 4Q16 and along with improving oil prices is supporting a significant improvement in EBITDAX margins per Boe (see Figure 2). The deepwater acquisition along with its Algeria and Ghana assets have positioned the company to be a significant FCF generator at oil prices above $50 per bbl, while still supporting double digit oil growth.

Figure 2: Historical EBITDAX Margins



Source: Company data, J.P. Morgan estimates

Factor 1— Returning significant cash back to shareholders, while delivering value added oil growth

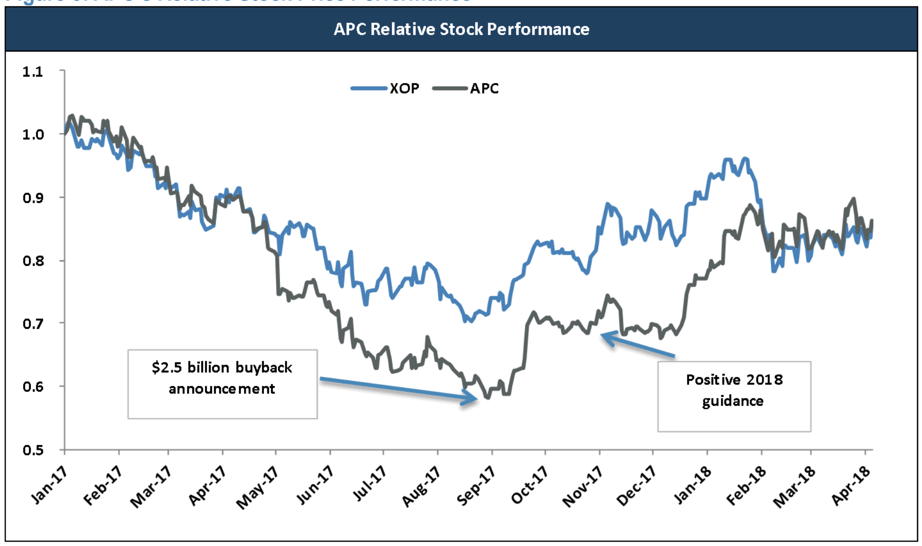
FCF generation and return of cash to shareholders is differentiating the large caps

U.S. shale companies have grown their oil and gas resource bases exponentially over the past decade. Through trial and error, the adoption of new technologies (mostly completions oriented), and a focus on efficiency gains in the downturn, domestic shale producers have also significantly reduced break-even costs to levels that are highly competitive ex-OPEC on a global scale. Yet the stocks have lagged the broader markets for 6 of the past 7 years, including 30% last year. Given the historical growth focus in the sector, the missing link has been the inability of the industry to harness this advantaged position in the global cost curve to deliver adequate returns and FCF to shareholders. Hence the stocks have de-rated. In 2017, a common characteristic of the winners were companies that successfully transitioned to FCF stories or executed balanced capital allocation programs. We believe this theme has legs and could continue to differentiate the stocks, particularly the large caps. We believe APC is well positioned from this shift in investor attitudes towards FCF generation given the company's long-term capital investing philosophy within organic cash flow and improved margin profile following successful portfolio management.

We see APC as the next success story in E&P transitioning to a balanced growth and FCF business model

Following the completion of the company's portfolio transformation process and disappointing share price performance in 2017, APC announced a surprise $2.5 billion buyback, which we argued at the time positioned the company as the next success story in U.S. E&P from producers transitioning to more balanced FCF generation and returns focused capital allocation programs, joining successful transitions at COG and COP. While APC's stock received an initial boost from the buyback announcement, the stock didn't start to move on a relative basis until the market was able to digest the company's positive 2018 guidance, which included double digit oil growth through at least 2020.

Figure 3: APC's Relative Stock Price Performance



Source: Bloomberg.

In 4Q17 results season, several leaders in U.S. shale development established or announced plans to return cash to shareholders. APC quintupled its annual dividend to $1.00 per share (1.6% yield) and announced a 20% increase in its buyback authorization to $3.0 billion from $2.5 billion, including the expectation that the buyback would be concentrated toward the early part of the year (APC bought back ~$500 MM in January alone). While this new level of discipline has not lifted the fortunes for the group as a whole (E&P stocks are up 3% since the beginning of December vs. a 1% increase in the broader market), we do note that the top performing stocks include companies such as APC (+30%), PXD (+17%), CLR (+29%), and FANG (+6%) that are achieving the optimal balance between growth and disciplined investing and have outlined plans for cash return or debt reduction. As of year-end 2017, APC had $4.6 billion of cash on its balance sheet. Our modeling suggests more FCF generation over the next few years at the strip. From 2018 to 2020, we see potential for $3.5 billion in FCF generation that can support more cash return to shareholders, while still supporting double digit oil growth. From 4Q17 through the end of 2020, we see the potential for more than $6.5 billion in cash return to shareholders inclusive of the $1.00 per annum dividend.

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Figure 4: Anadarko Petroleum (APC)--Summary Financials

SUMMARY FINANCIAL STATEMENTS						
	2015	2016	2017	2018E	2019E	2020E
Commodity Prices						
WTI ($/bbl)	48.68	43.34	50.89	62.93	59.21	55.62
Henry Hub ($/mcf)	2.66	2.40	3.00	2.87	2.79	2.78
Cash flows						
APC E&P cash flow*	**3,871**	**2,082**	**3,108**	**5,633**	**6,105**	**6,023**
APC E&P capex	(5,363)	(2,824)	(4,344)	(4,399)	(4,606)	(5,234)
APC E&P level free cash flow	**(1,492)**	**(742)**	**(1,236)**	**1,234**	**1,499**	**789**
OPERATING PROFILE						
Upstream						
Production by Region (Mboed)						
DJ Basin	224	243	239	284	333	378
Delaware Basin	32	45	60	101	144	184
Eagle Ford Basin	85	73	32	0	0	0
Marcellus Basin	75	82	30	0	0	0
East Texas Basin	57	39	0	0	0	0
Greater Natural Butes	69	62	50	40	33	28
Wamsutter	21	10	0	0	0	0
W Chalk / Eaglebine	8	7	4	0	0	0
Other	81	43	35	12	10	8
Lower 48 Production	**652**	**602**	**449**	**436**	**521**	**598**
Alaska	9	11	11	0	0	0
Gulf of Mexico	85	86	149	145	145	145
Total US Production	**745**	**699**	**580**	**582**	**666**	**743**
Algeria	59	71	65	63	64	59
TEN	0	0	10	11	11	12
Jubilee	0	0	18	18	22	21
Other International (Ghana)	32	19	28	29	34	33
Total APC Production	**836**	**793**	**672**	**673**	**763**	**835**

Source: J.P. Morgan Research estimates.

Factor 2—Despite YTD outperformance, APC remains one of the most attractively valued stocks under our sustaining FCF analysis

E&P stocks have meaningfully lagged the broader market given inferior returns

Figure 5 and Figure 6 illustrate the weightings of the energy sector as a percentage of the S&P 500 and Russell 1000 indexes. Over the past 10 years, energy weightings in key U.S. stock indices have declined materially, with energy equities now comprising only 6% of the S&P 500 and Russell 1000 indices vs. 12% in both indices at the end of 2007. Figure 7 and Figure 8 illustrate the total cumulative return of the S&P 500 and S&P E&P Index (SPSIOP), highlighting the significant underperformance of E&P stocks, particularly during the past five years.

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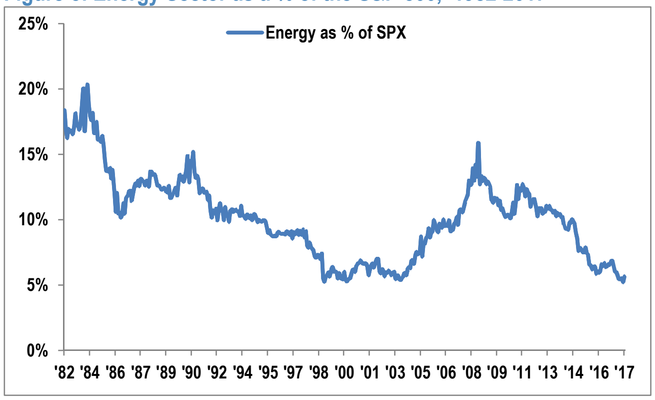
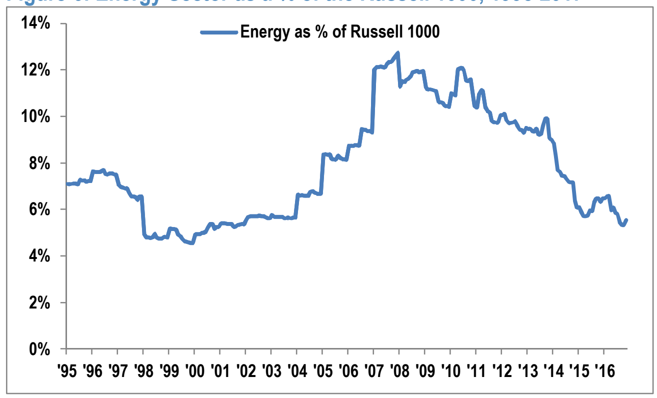
Figure 5: Energy Sector as a % of the S&P 500, 1982-2017



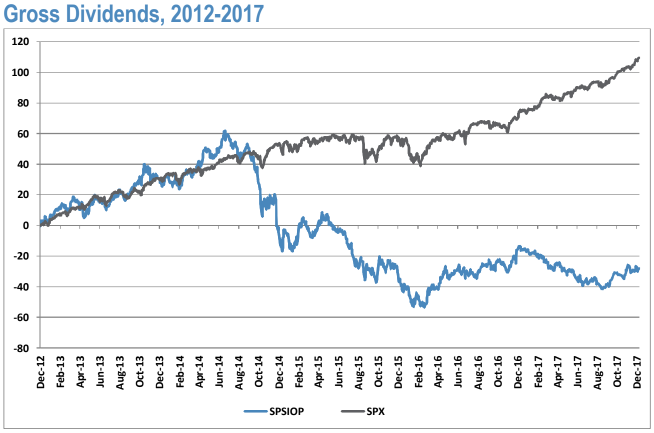
Source: Bloomberg.

Figure 6: Energy Sector as a % of the Russell 1000, 1995-2017



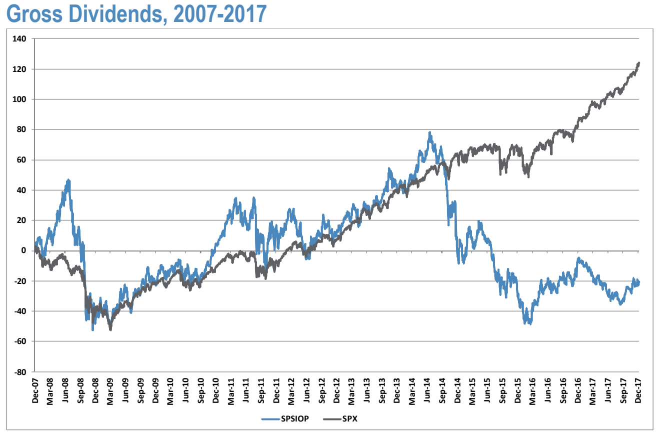
Source: Bloomberg.

Figure 7: E&P Sector Performance, 5-Year Cumulative Total Return Gross Dividends, 2012-2017



Source: Bloomberg

Figure 8: E&P Sector Performance, 10-Year Cumulative Total Return Gross Dividends, 2007-2017



Source: Bloomberg

While declines in commodity prices are clearly a driver of the underperformance, we believe another key factor that has driven the disappointing relative share performance has been the industry's singular focus on growth at the expense of returns, FCF generation, and the preservation of a strong balance sheet. Table 2illustrates Returns on Equity (ROE) for Large Cap E&P stocks over the past few years relative to the market. On average, ROE has decreased by 13% since 2014 to -2% in 2017, which is materially below broader market levels.

Table 2: Average Large Cap E&P and S&P 500 ROE, 2014-17

	2014A	2015A	2016A	2017E
Large Cap E&P	11%	0%	-2%	-2%
S&P 500	14%	12%	13%	16%

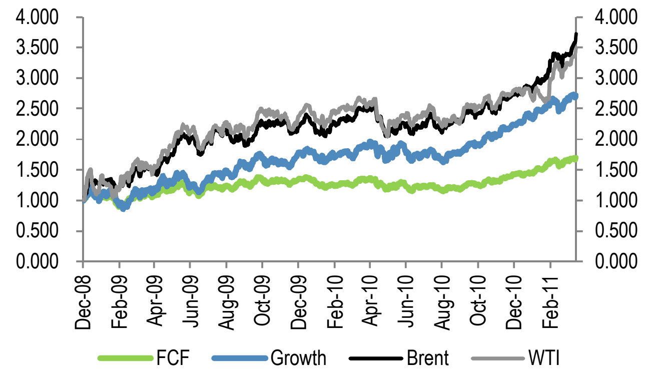
Source: Company reports and J.P. Morgan estimates.

Growth stocks did outperform during the 2018-14 period as market viewed shale producers are structural market share gainers that didn't negatively impact global S/D balance

Throughout the shale revolution, investors have generally rewarded E&P companies for delivering production and NAV growth without regard to FCF generation. As illustrated in Figure 9 and Figure 10, growth stocks meaningfully outperformed FCF stories from the 2008 to 2011 period during the strong recovery in commodity prices from trough levels, but were only more modestly better during the 2011 to 2014 period, which coincided with more relatively range-bound Brent prices, albeit at high levels. We think this reflected the market's view that U.S. shale production would be structural market share gainers by pricing out higher cost forms of production (international, deepwater) without having a negative impact on supply-demand conditions in the global oil market given OPEC support.

Figure 9: 2008 Trough to 2011 Peak Performance by Category

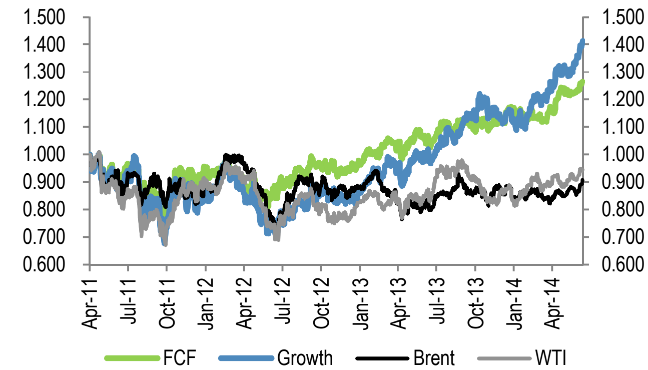
Share price indexed to 12/24/08



Source: Bloomberg. Note: FCF includes CNQ, COG, COP, CVX, XOM, HSE, IMO, OXY, SU. Growth includes APC, APA, EQT, HES, MRO, MUR, NBL, CXO, EOG, PXD, SWN, CLR, RRC, XEC, DVN, CHK.

Figure 10: 2011-2014 Flattish Period Performance by Category

Share price indexed to 4/8/11



Source: Bloomberg. Note: FCF includes CNQ, COG, COP, CVE, CVX, XOM, HSE, IMO, OXY, SU. Growth includes APC, APA, EQT, HES, MRO, MUR, NBL, CXO, EOG, PXD, SWN, CLR, RRC, XEC, DVN, CHK.

Following a period of painful balance sheet repair in 1H16 that coincided with cyclically low activity levels, E&Ps went back to their growth playbooks, fueling a rapid increase in U.S. onshore drilling activity starting mid-year 2016 (see Figure 11).

Figure 11: U.S. Rigcount--Delaware Basin Is Most Active Basin

Row Labels	3Q14	4Q14	1Q15	2Q15	3Q15	4Q15	1Q16	2Q16	3Q16	4Q16	1Q17	2Q17	3Q17	4Q17	1Q18	Current
Anadarko	131	131	56	52	52	46	38	35	51	60	99	113	106	105	106	107
Appalachian	141	141	111	94	75	60	38	37	43	46	62	68	77	68	70	69
Arkoma	16	17	13	7	5	0	0	0	1	2	2	1	0	0	0	0
Delaware	193	203	110	106	109	98	71	70	100	132	175	205	212	227	263	269
DJ	73	67	40	36	31	24	16	13	22	26	32	36	30	28	29	29
East Texas	42	42	31	30	32	31	14	21	20	31	47	57	57	62	61	60
Fort Worth	27	19	6	12	8	5	3	2	3	3	3	6	9	7	6	8
Gulf Coast	328	333	189	148	132	117	67	54	65	88	119	131	111	117	125	126
Mid-Con	196	183	109	88	76	58	35	36	38	57	48	48	49	44	49	51
Midland	304	289	161	129	131	112	77	86	118	146	175	186	192	185	192	195
Piceance	53	52	29	28	27	17	10	10	16	19	23	33	36	33	29	29
PRB	35	39	13	11	9	3	1	2	8	12	9	13	17	18	15	14
San Juan	8	9	3	1	4	2	2	2	2	0	4	5	4	5	2	2
Williston	204	200	101	79	68	60	30	29	32	36	45	55	56	51	57	56
Other	177	152	70	70	78	55	27	39	44	35	41	53	47	45	59	64
Total	**1,928**	**1,877**	**1,042**	**891**	**837**	**688**	**429**	**436**	**563**	**693**	**884**	**1,010**	**1,003**	**995**	**1,063**	**1,079**

Source: Drilling Info.

The combination of significant well productivity gains and high reinvestment levels exacerbated market concerns on oil macro, which drove the shift towards rewarding balanced capital allocation approaches

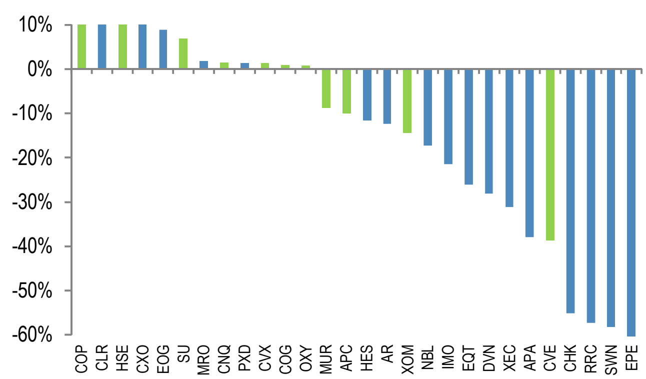
While growth stocks did well on a relative basis in 2016 following the recovery in oil prices from the February 2016 nadir, when oil prices slumped into the mid-$20s, we have observed a different dynamic in 2017, with growth stocks lagging FCF stories despite relatively range-bound prices throughout the year. In our view, this dynamic reflects the market's concern on supply-demand conditions and fears that shale oversupply could tip the market into an oversupplied state. Assuming current strip pricing, we see 829 MBo/d of U.S. shale growth in 2018 and 1,070 MBo/d in 2019 on a year-over-year basis on current reinvestment rates and the fact that OPEC has curtailed ~1 MMBo/d of oil output, which represents more than one year of global demand growth. Given the subdued longer-term outlook for the commodity, we think another key reason the group has not been rewarded is the fact that reinvestment rates for the group are above 100%, which is poised to increase leverage levels in 2018. In others words, investors have not rewarded growth stocks (particularly companies that were outspending their cash flows) given macro concerns under the notion that this could further exacerbate the potential for oversupply in the market, leading to lower prices down the road. Instead, the market has rewarded companies with more balanced capital allocation approaches between growth and FCF generation.

Table 3: JPM Basin Oil Production Model: Key US Shale Plays (Oil Production)

Year	PDP Decline	$30 Oil	$40 Oil	$50 Oil	$55 Oil	$60 Oil	$70 Oil
FY 2014A	4,127	4,127	4,127	4,127	4,127	4,127	4,127
FY 2015A	540	540	540	540	540	540	540
FY 2016A	-297	-297	-297	-297	-297	-297	-297
FY 2017A	85	85	85	85	85	85	85
FY 2018E	-602	-138	179	514	672	829	1,070
FY 2019E	-827	-385	13	515	792	1,070	1,532
FY 2020E	-470	-259	18	455	744	1,034	1,693

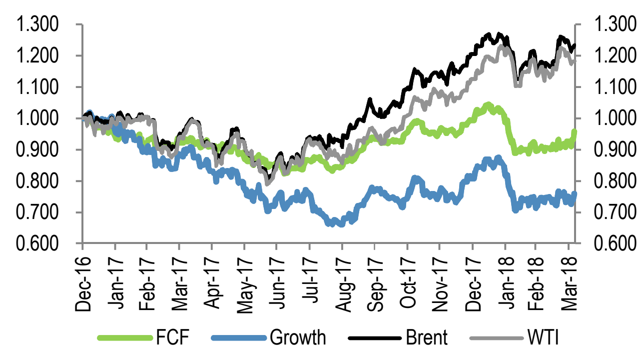
Source: J.P. Morgan estimates, Industry data, Drillinginfo

Figure 12: 2017-18 Stock Performance by Company
Share price returns – 12/31/16 – till date



Source: Bloomberg. Note: Green bars represent FCF oriented names, while blue bars represent growth oriented names.

Figure 13: 2017-18 Stock Performance by Category
Share price indexed to 12/31/16



Source: Bloomberg. Note: FCF includes CNQ, COG, CVE, COP, CVX, XOM, HSE, IMO, OXY, SU. Growth includes APC, APA, EQT, HES, MRO, MUR, NBL, CXO, EOG, PXD, SWN, CLR, RRC, XEC, DVN, AR, EPE, CHK.

In 2017, we introduced a sustaining FCF investing framework as investors went beyond the NAV to value the stocks

In 2017, we observed how the singular focus on NAVs was no longer being valued the same way in the market, while companies with more balanced FCF generation and capital allocation were outperforming. We introduced an investing framework that ranked producers on sustaining FCF generation, balance sheet strength, and capex discipline. Our methodology includes the comparison of our CFO estimates through 2021 to our estimates of the level of capex required to maintain flat production, which we define as "sustaining FCF."

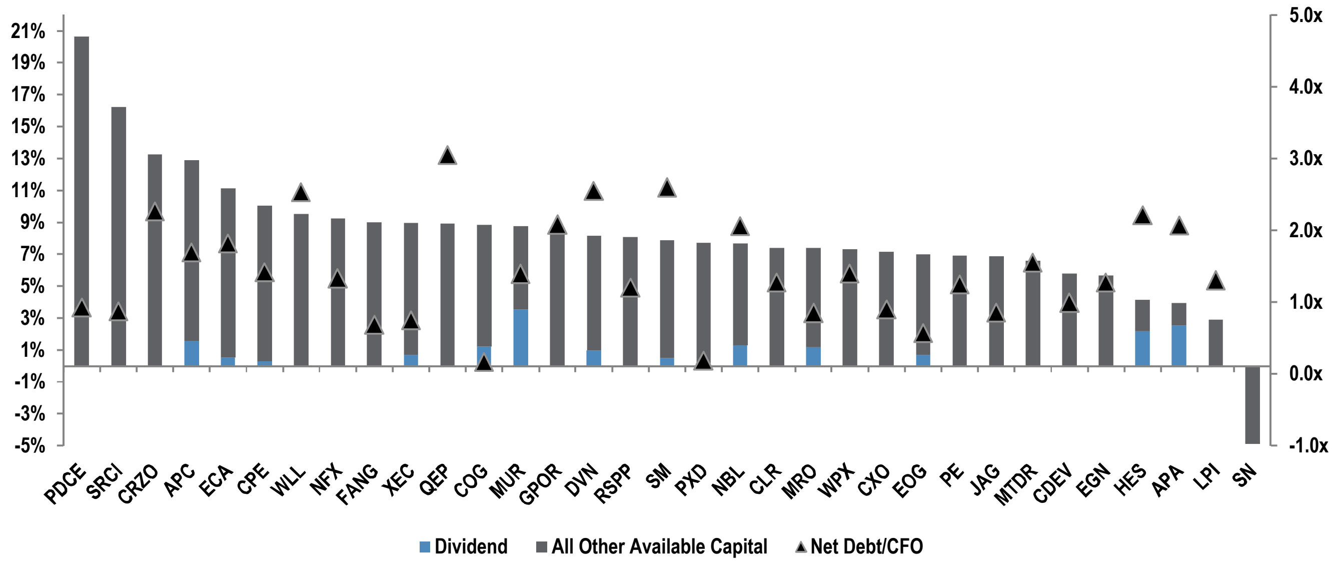
APC is the most attractively valued diversified stock in the group on our sustaining FCF analysis

We think the market will reward companies that generate the highest FCF yields yet have ample undrilled inventory positions that provide long-term growth visibility. For each producer, we have calculated the sustaining capex required to keep production and reserves flat relative to prior-year 4Q levels. We compare our CFO estimates by year to sustaining or maintenance capex and have compared operators on a yield basis (dividing by the market capitalization of each producer).

Figure 14 and Figure 15 illustrate our updated sustaining FCF yield analysis calculated at the strip for our coverage group, including the SMID cap players. APC is the most attractively valued diversified stock and one of the most attractively valued names in the entire group given strong capital efficiency and the discounted valuation. We think management's decision to move forward with a $3.0 billion buyback plus significant dividend raise is supportive of our sustaining FCF analysis.

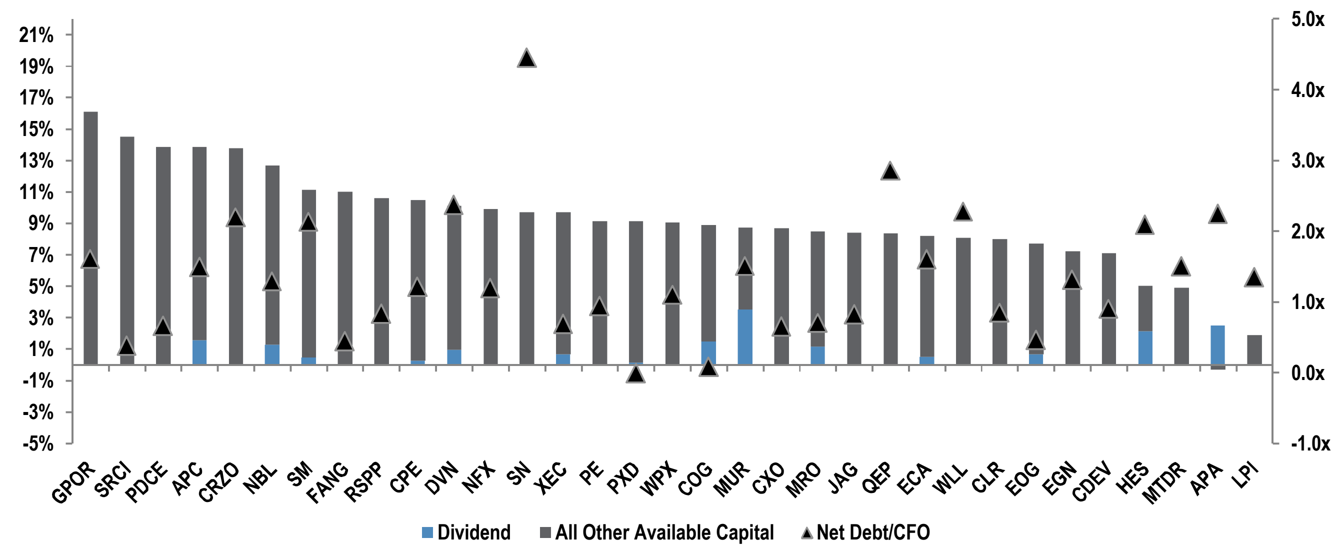
Figure 14: 2019E Sustaining FCF Yield (@ $56.19/bbl WTI, @$61.64/bbl Brent and $2.81 Henry Hub)

CFO – Maintenance Capex / Market Cap — Net Debt/CFO



Source: Bloomberg, Company reports and J.P. Morgan estimates.

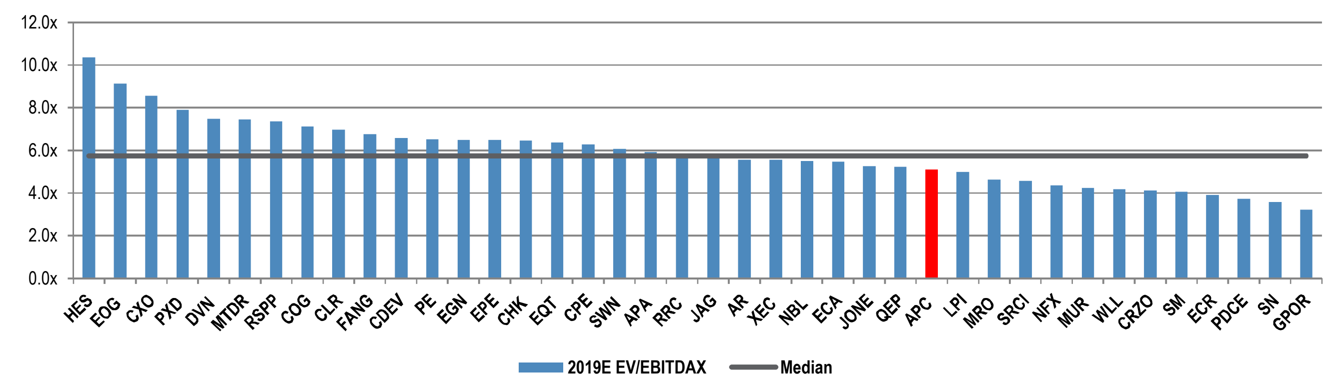
Figure 15: 2020E Sustaining FCF Yield (@ $53.76/bbl WTI, @$59.10/bbl Brent and $2.82 Henry Hub)



Source: Bloomberg, Company reports and J.P. Morgan estimates.

As shown in Figure 16, APC is also attractively valued on our 2019 EV/EBITDA estimates, trading at 5.1x, which is below the peer group average.

Figure 16: 2019E EV/EBITDA



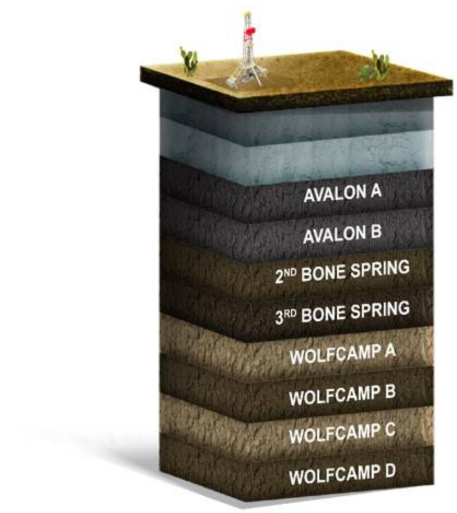
Source: J.P. Morgan Research estimates.

APC's acreage position in the core is in the best rock in the Lower 48 given stacked pay potential and strong well productivity

Factor 3—"Core of the core" position in the Delaware Basin

Anadarko (APC) holds interests in 589,000 gross (240,000 net) acres in the Delaware Basin with a large portion of the acreage concentrated in the prolific Loving, Reeves, and Ward Counties (see Figure 19). APC conducted its operations in the Delaware Basin in conjunction with a participation agreement with Shell that lapsed in July 2017. Prior to the conclusion of this participation agreement with Shell, APC completed well proposals that now enable the company to operate approximately 70% of the joint venture acreage on a go forward basis. As illustrated in Figure 11, the Delaware is the most active basin in terms of rig activity, with 269 rigs or 25% of the rigs in the U.S.

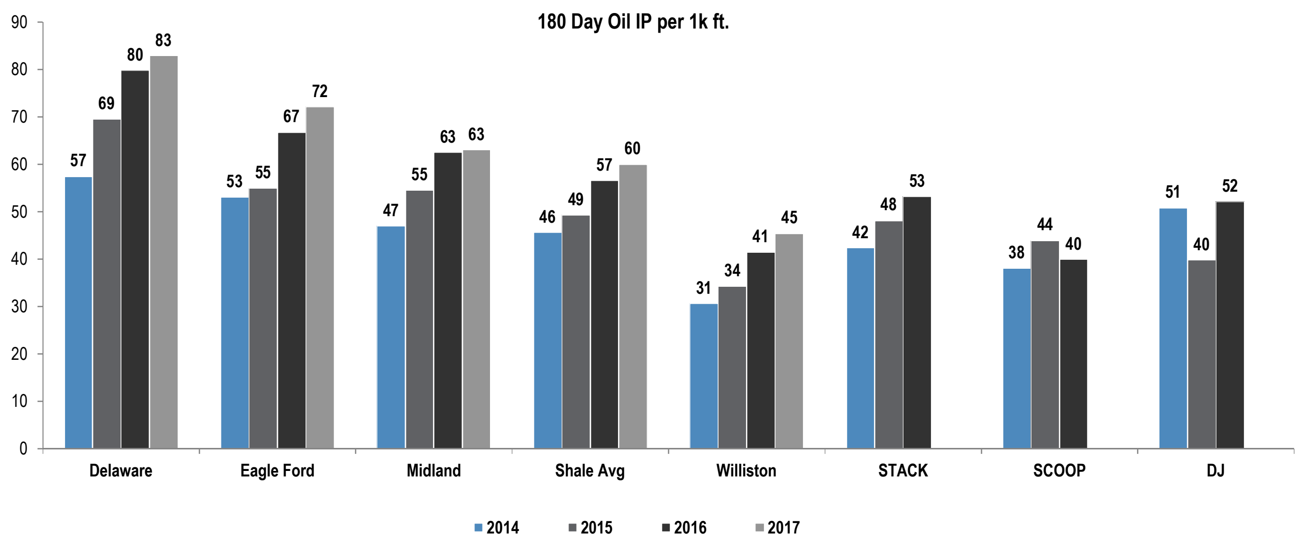
Figure 17: Delaware Basin: Significant Stack Pay Potential



Source: Company data.

We believe the northern Delaware Basin core is the most valuable zip code in terms of acreage values in U.S. E&P. This stems from the stacked pay nature of the acreage position (see Figure 17), the strongest oil well productivity in U.S. Shale (see Figure 18), and strong drilling economics.

Figure 18: U.S. Shale: Oil Well Productivity by Basin (180 Day Oil IP per 1,000 ft)



Source: J.P. Morgan estimates, Drilling Info.

Low cost of entry should support strong full cycle returns

Figure 19 illustrates APC's acreage position in the Delaware Basin. Unlike the bulk of its peers, APC's acreage position represents legacy acreage that was leased years before the horizontal drilling boom. In fact, APC's Delaware Basin acreage position was leased at an average cost of $1,000 per acre, which is significantly below average A&D costs of $37,000 per acre observed since mid-2016 in the Permian Basin (see Figure 23).

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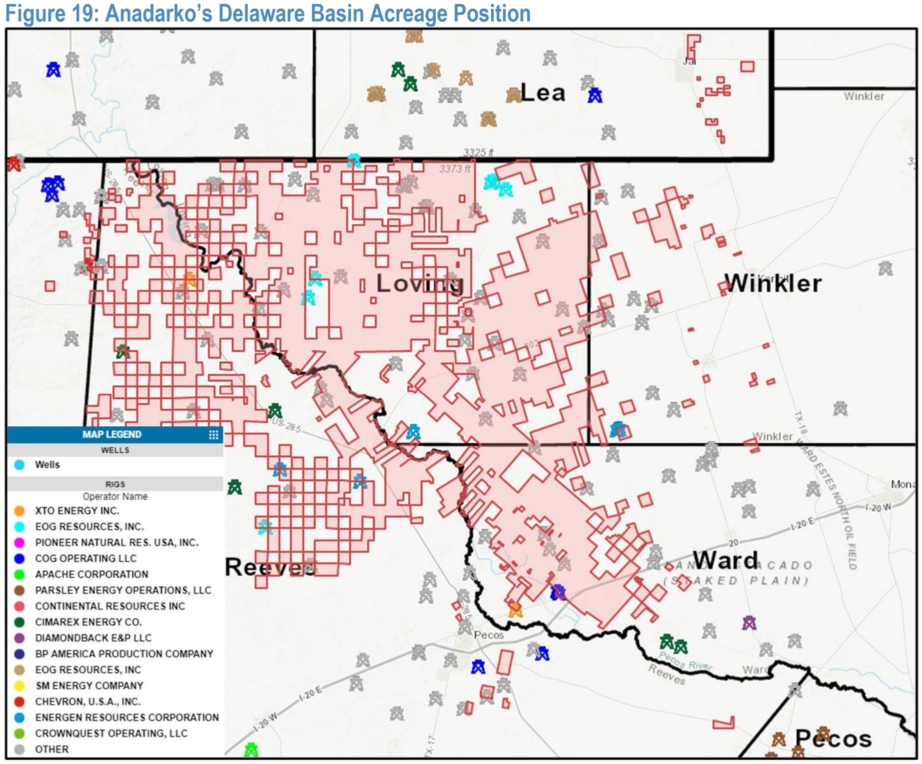
Figure 19: Anadarko's Delaware Basin Acreage Position

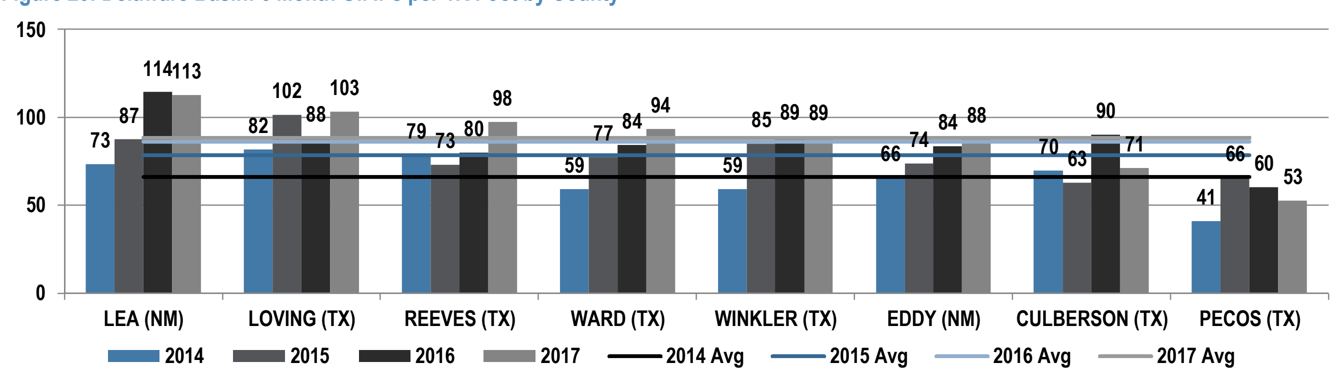


Source: Drilling Info.

Loving, Reeves, and Ward screen attractively within our County analysis in the Delaware Basin

In order to assess the quality of APC's acreage, we have pulled all Delaware Basin horizontal wells drilled in Texas and New Mexico using state data and have analyzed well productivity by County on an adjusted basis for lateral lengths. Based on our estimates, APC's acreage position consists of ~118K net acres in Loving, ~60K net acres in Reeves, ~48K net acres in Ward, and ~13K net acres in Winkler/Lea. At the County level, Lea, Loving, and Reeves Counties screen well with strong oil well productivity based on initial rates as well as with longer production history. As illustrated in Figure 20, oil well productivity as measured by average 6-month oil IP's in Loving, Reeves, and Ward were second, third, and fourth highest in the basin after Lea County (Loving, Reeves, and Ward 6-month oil IP's per 1,000 ft. of lateral were 103 Bo/d, 98 Bo/d, and 94 Bo/d, respectively).

Figure 20: Delaware Basin: 6-Month Oil IPs per 1K Foot by County



Source: J.P. Morgan estimates, Drilling Info.

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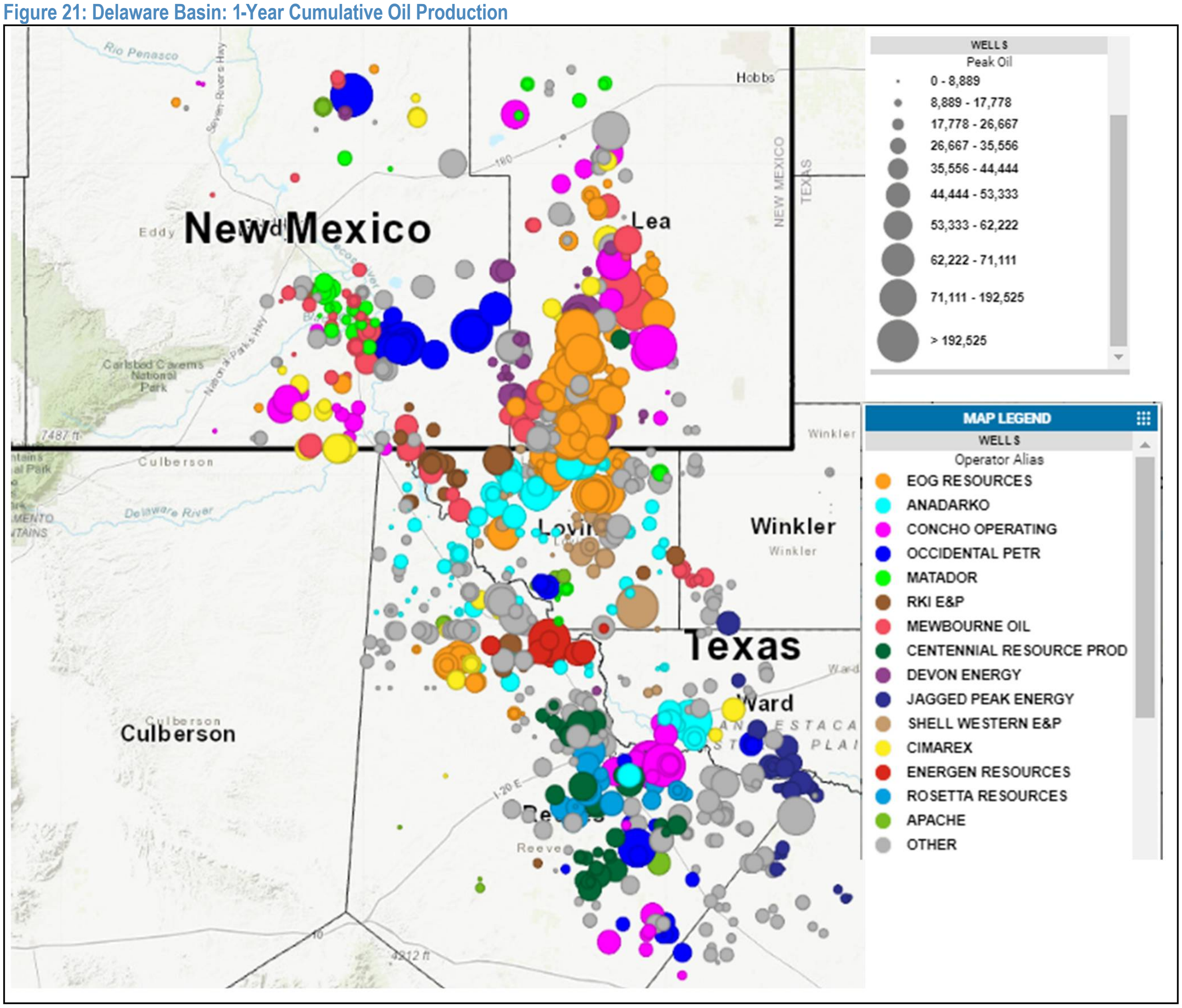
We also plot Delaware Basin one-year cumulative oil production in a bubble map (see Figure 21). As the bubble map illustrates, EOG and CXO stand out in the state line area of the basin. APC has also brought online some strong wells in Loving and Ward along with some solid completions in Reeves.

Figure 21: Delaware Basin: 1-Year Cumulative Oil Production



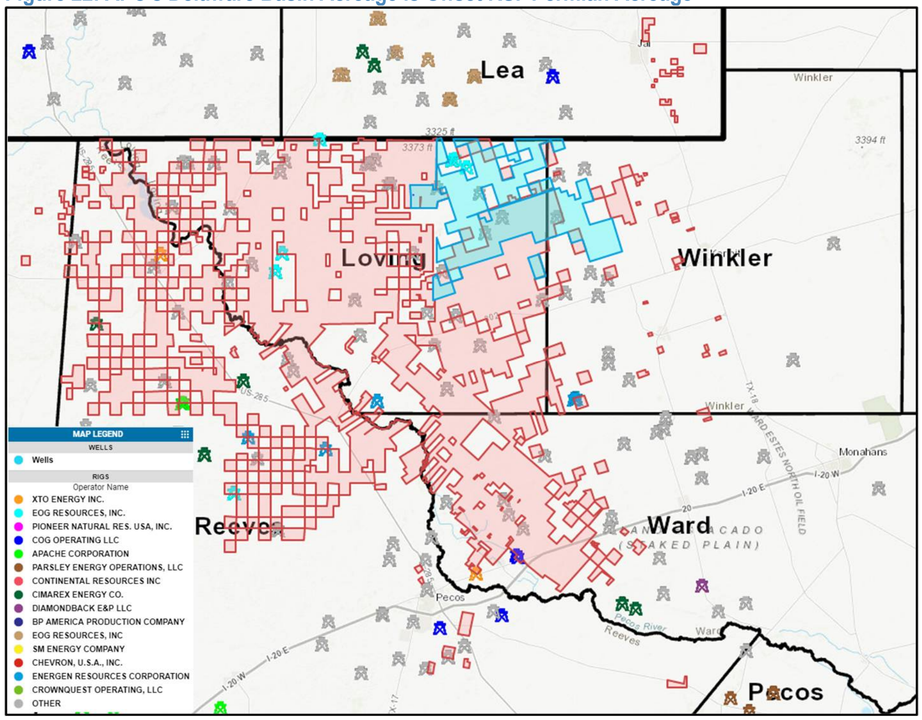
Includes wells from Jan 1st 2017 till date

Source: J.P. Morgan estimates, HPDI.

APC's acreage position is offset RSPP

In the most recent transaction, one of the most knowledgeable management teams in the Delaware Basin (Concho Resources) acquired Anadarko's Delaware offset operator RSPP at a per acre value of $76K per acre (see Figure 23). Figure 22 illustrates the close proximity of APC's acreage position relative to RSPP concentrated in Loving County.

Figure 22: APC's Delaware Basin Acreage is Offset RSP Permian Acreage



Source: Drilling Info. Anadarko acreage in red and RSPP acreage in blue.

CXO transaction highlights the value of acreage in the northern Delaware Basin core

Applying the average Permian acreage cost of $37K per acre and using $40K per flowing boe of production, we get to an APC Delaware valuation of $12 billion which is almost 27% of APC's current enterprise valuation. Using what Concho paid for APC's Delaware offset operator RSPP, could support a valuation of $21 billion for APC's Delaware Basin position, which is almost 47% of APC's current enterprise valuation. On the CXO-RSPP call, CXO management indicated that RSPP's Permian assets, including their state line position in Loving County would go to the top of CXO's development queue. We see this as a positive read through for the value of APC's Delaware Basin inventory position.

Figure 23: Permian Basin A&D Metrics

	Target	Purchaser	Date	Transaction Value	$/Acre	$/Location
1	Private Sellers	QEP	6/22/2016	$600	$59,404	$1.27
2	NGP	Centennial	7/22/2016	$1,735	$35,892	$1.34
3	Reliance Energy	Concho Resources	8/15/2016	$1,600	$33,264	$2.51
4	Arris Petroleum	PDC Energy	8/23/2016	$1,505	$23,542	$2.03
5	Yates Petroleum	EOG Resources	9/6/2016	$2,451	$9,031	$0.98
6	Silver Hill	RSP Permian	10/13/2016	$2,400	$48,157	$1.01
7	Browning Oil	Occidental Petroleum	10/13/2016	$1,765	$41,523	$2.08
8	Q Star	SM Energy	10/18/2016	$1,600	$42,922	$0.85
9	Ameredev	Callon Petroleum	12/13/2016	$615	$33,427	$2.61
10	Brigham Resources	Diamondback Energy	12/14/2016	$2,430	$26,912	$1.72
11	Clayton Williams	Noble Energy	1/16/2017	$3,225	$32,268	$1.19
12	Bass	ExxonMobil	1/17/2017	$5,600	$19,995	NA
13	Double Eagle	Parsley Energy	2/7/2017	$2,800	$36,511	$1.44
14	BC Operating	Marathon	3/9/2017	$1,100	$18,394	$2.73
15	Private Sellers	QEP	7/26/2017	$732	$51,203	$0.96
16	RSP Permian	Concho Resources	3/28/2018	$9,500	$75,504	$1.74
	Total/Avg			**$39,658**	**$36,747**	**$1.63**

Source: J.P. Morgan estimates, Company data.

Factor 4—Completion of Delaware Basin infrastructure poised to unlock significant growth similar to what occurred in DJ Basin in early 2014

APC's well productivity has lagged peers given operatorship capture and limited infrastructure

In Figure 24 and Figure 25, we sort operators by initial oil productivity standardized by lateral length. When assessing Delaware Basin well productivity by operator, APC's results have been in the bottom quartile and admittedly lagged their peers. In our view, this reflects the fact that the company was engaged in operatorship capture and has more limited infrastructure in place to support optimized well completions.

During 4Q17 earnings season, the industry highlighted numerous operating and logistical challenges in the Delaware Basin associated with significant industry activity. APC's business model includes the integration of its upstream activities with midstream to support the development of key infrastructure ahead of upstream activities and timely well connections. In the DJ Basin, APC has benefitted from the lowest line pressures, which has fueled strong historical growth at Wattenberg. In the Delaware Basin, APC is constructing a tankless gathering system that should provide several key operational benefits. While APC's tankless system requires more up-front capital, the longer-term benefits include more capital efficient development, lower opex, and reduced environmental footprint.

Completion of infrastructure backbone should support improved well results

APC should be able to optimize a greater proportion of its wells once it completes construction of the Reeves County and Loving County ROTFs. Once its key infrastructure projects are completed, we believe APC's well productivity could be on par with RSPP, which has acreage offset of APC in Loving and Winkler Counties (see Figure 22). RSPP's results are near the top of the Delaware Basin peer group trailing EOG, OXY, and NBL (see Figure 24 and Figure 25).

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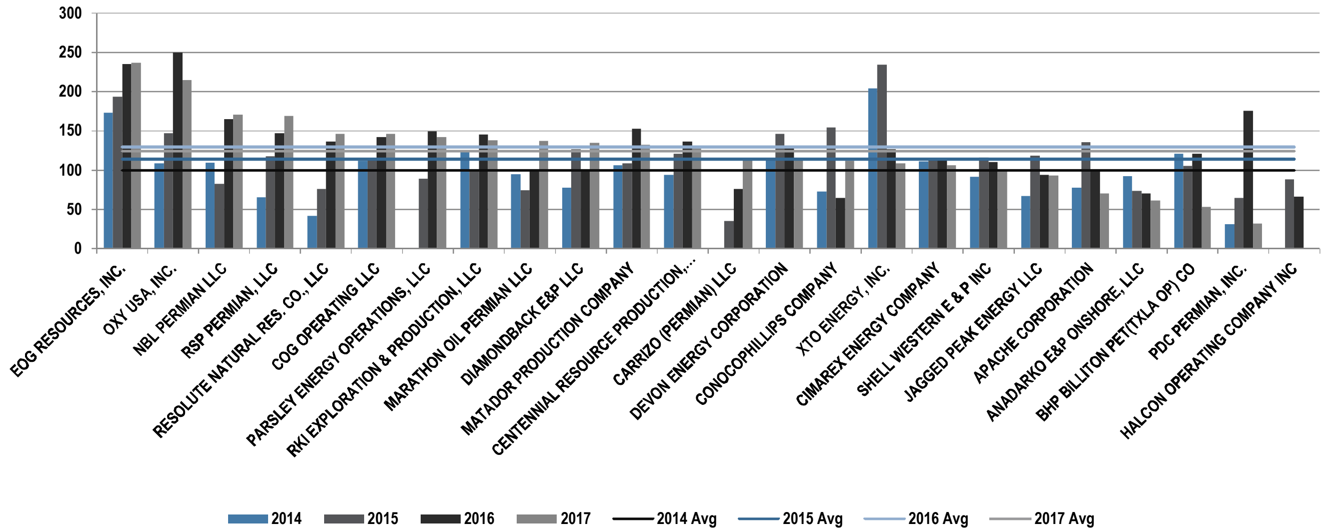
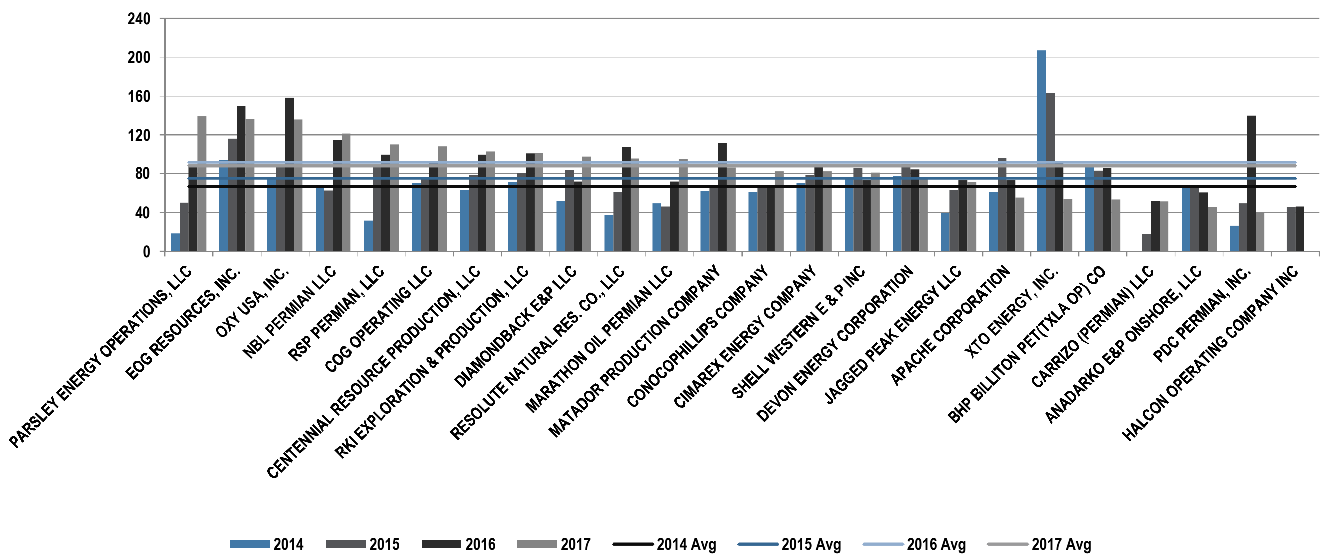
Figure 24: Delaware Basin: Oil IP-30 per 1K Foot: 14-17 (sorted by 2017)



Source: J.P. Morgan estimates, HPDI

Figure 25: Delaware Basin: 6 Month Oil IP's per 1K Foot: 14-17 (sorted by 2017)

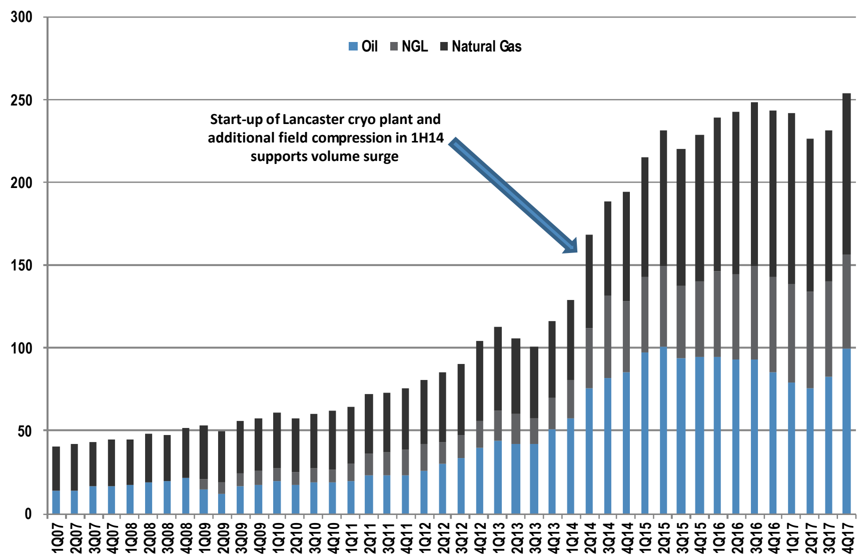


Source: J.P. Morgan estimates, HPDI.

Until recently, Anadarko had been focused on operatorship capture in its joint development area with Shell. As such, the company was primarily completing shorter lateral length wells that were not optimized given the lack of infrastructure. One of the key objectives of the company is to complete a strategic infrastructure buildout in the Delaware Basin. In 2017, APC expanded its midstream infrastructure for Bone Spring, Wolfcamp, and Avalon production, which included 60 miles of oil and water gathering lines and a 20 MBo/d expansion of its oil processing capacity at its Avalon central production facility.

APC's infrastructure buildout will largely be completed by year-end 2019 and will include three new gas processing facilities (Ramsey VI in 4Q17, Mentone I in 2H18, and Mentone II in 2H18) and three regional oil treating facilities (Reeves in 2Q18, North Loving in 3Q18, and East Loving in 2019). As highlighted in the company's 2018 guide, APC's Delaware Basin volumes will be relatively flat until the ROTFs in Reeves and Loving are completed in 2Q18 and 3Q18, respectively. In total, APC and Western Gas will complete the construction of 120 MBo/d of oil treating facilities in Reeves and Counties, which should support an inflection point to growth in 2H18. We see potential for a similar impact to APC's Delaware Basin volumes to what occurred in 1H14 when APC brought on-line its Lancaster cryogenic facility as well as additional field compression (Figure 26).

Figure 26: Historical DJ Basin Production



Source: Company data, J.P. Morgan Research estimates.

Factor 5—DJ Basin well optimization should support strong growth

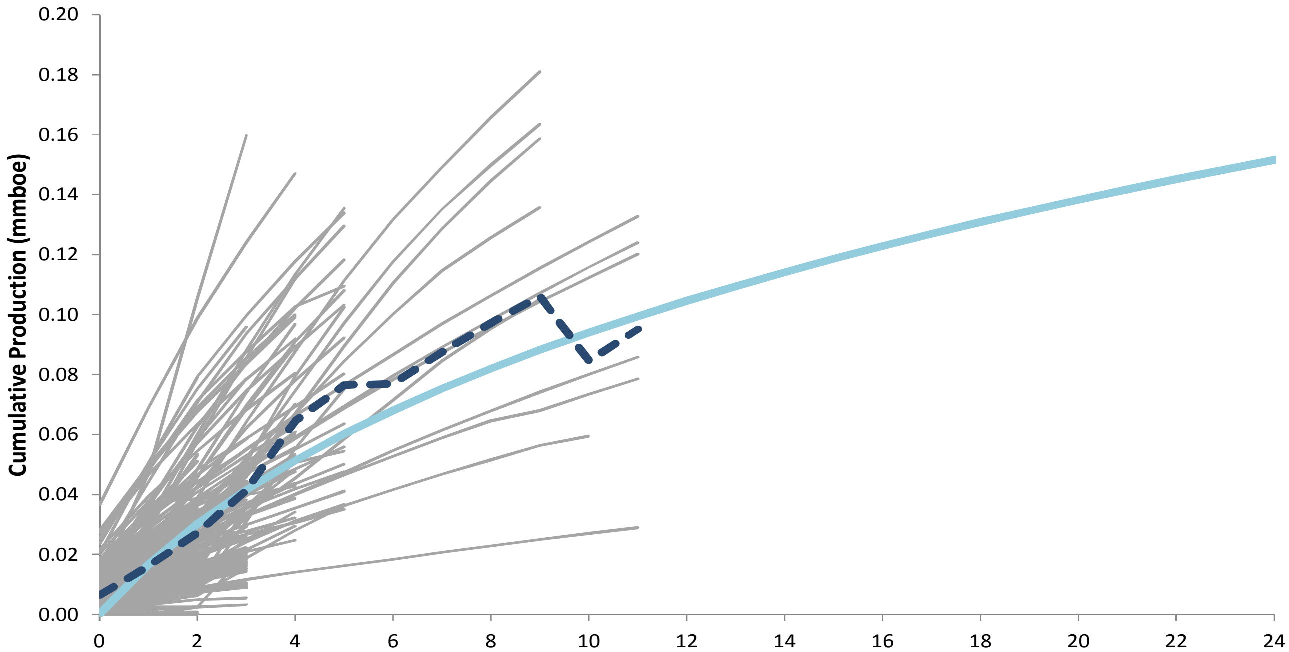
APC adopted new completion design for short and mid-length laterals in 2017

On a historical basis, APC's proppant intensity has lagged other DJ Basin operators as APC has been solving for the optimal combination of cost vs. completion design that would maximize the highest NPV per section. While larger jobs could contribute to higher initial production rates, this would be offset by higher costs and potentially fewer wells per section. In 2017, Anadarko successfully changed its completion design on Niobrara short and medium laterals with encouraging results. The new design involves higher fracture stimulation intensity driven by increased fluid volumes and tighter stage spacing. In 2017, the bulk of APC's shorter and mid-lateral length wells utilized a new completion design.

APC's DJ Basin program is performing in-line with 690 MBoe type curve standardized for lateral length

In Figure 27, we plot cumulative production of APC's DJ Basin completions online since January 2017. As a reminder, APC adopted a new completion design for the bulk of its short and mid-lateral length wells in 2017. As a whole, the company's program on a lateral length adjusted basis is trending consistent with the company's type curve. That said, note the number of completions with limited production history (i.e., less than 4 months) that are substantially outpacing the company's 690 MBoe type curve at average lateral lengths of 6,700 ft. In 2018, we expect APC to apply its new completion design to extended reach laterals. We see potential upside to the company's DJ Basin production forecast that only bakes in historical performance for extended reach laterals.

Figure 27: Anadarko's 2017 DJ Basin completions relative to 690 MBoe Type Curve (standardized by average lateral length)



Source: J.P. Morgan estimates, Drilling Info.

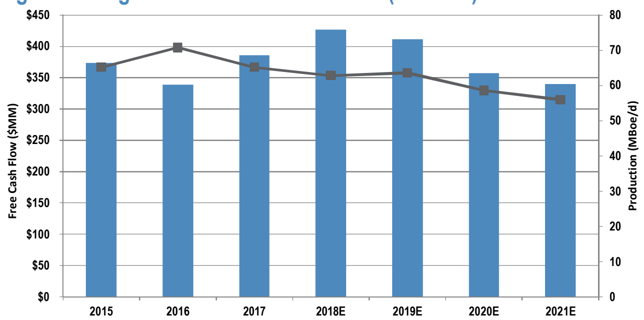
Conventional assets that deliver FCF are more important given the pivot towards cash flow from NAV

Factor 6—Attractive mix of conventional assets should support strong FCF

Until recently, the market generally rewarded E&P companies for delivering production and NAV growth without much regards to FCF generation. Under a pure NAV approach, conventional assets did not garner significant investor attention as these assets were generally just valued at PDP value at the strip. As market sentiment has shifted beyond the NAV toward cash flow, conventional assets that can deliver FCF become much more important. We believe APC's reshaped asset base through active portfolio management has an optimal mix of stable conventional production (low sustaining capex and high margins) and unconventionals (high growth rates from DJ and Delaware Basins) to deliver attractive debt adjusted growth and significant free cash flow.

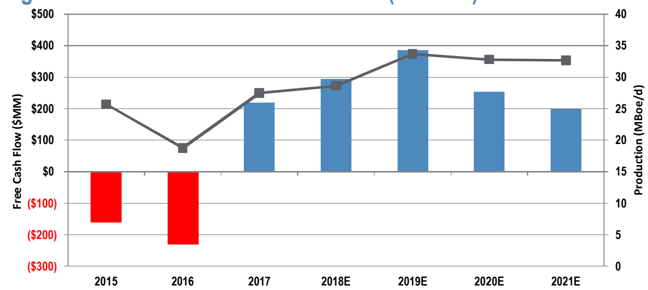
As illustrated in Figure 28 and Figure 29, we anticipate significant FCF generation from the company's conventional international assets in Algeria and Ghana. On a combined basis, we are forecasting an average of more than $650 MM per annum in FCF generation on an after tax basis over the next four years or $2.7 billion in total. Importantly, APC's overall production from Ghana and Algeria should be relatively flat over this time period (modest growth in Ghana from the TEN field offsetting natural field declines in Algeria).

Figure 28: Algeria Free Cash Flow Profile (after-tax)



Source: J.P. Morgan estimates, Company data.

Figure 29: Ghana Free Cash Flow Profile (after-tax)



Source: J.P. Morgan estimates, Company data.

Another key enabler of the company's cash return strategy is the company's GoM segment, which is poised to deliver ~$1 billion per annum in FCF at oil prices in the low-$50s given high cash margins and attractive development costs. APC believes it can sustain relatively flat production just based on its current rig schedule that includes a reduction in the company's contracted offshore rigcount from 3 drillships in 1H18 to only one ship in 2H19. The company appears to have good near-term drillbit momentum given recent tieback success at Horn Mountain and Marlin and ongoing development drilling at Holstein and Caesar/Tonga. Meanwhile, the Hadrian North discovery that is scheduled to be on-line in 2019 should help sustain Lucius at high operating rates into 2020 and beyond. APC has the largest operated infrastructure footprint in the GoM with 10 host facilities and has been successful in replenishing its tieback inventory at low costs given sparse industry participation in recent GoM lease sales.

Factor 7—Optionality to higher production levels from the TEN field in Ghana

TEN consortium should benefit from the restart of drilling activities in Ghana

A potential near-term catalyst for APC is the restart of drilling activity at the TEN field in Ghana, where APC holds an 19% working interest in the field. The field came on-line in August 2016, approximately three years after the Plan of Development was approved by the government in Ghana. As a result of the border dispute between Ghana and Cote d'Ivoire, the Special Chamber of the International Tribunal of the Law of the Sea (ITLOS) intervened and there was a suspension in drilling activity at the field until it completed its ruling on the maritime border dispute. At that time, the TEN consortium led by Tullow had completed 11 of the planned 24 wells at the field. In September 2017, ITLOS made a ruling indicating that the new maritime boundary would not affect the TEN fields. As a result, Tullow received approval to restart drilling activities at TEN.

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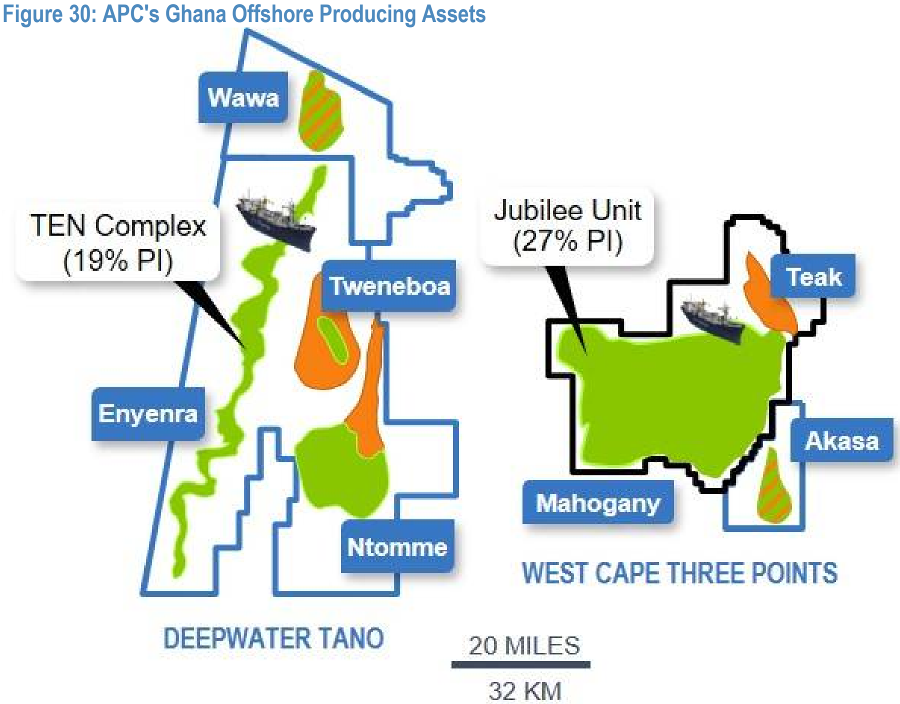
Figure 30: APC's Ghana Offshore Producing Assets



Source: Anadarko Petroleum

Success at key development well underway at Ntomme could support higher volumes from Ghana

In 2017, gross production at TEN averaged 56 MBo/d vs. nameplate capacity of 80 MBo/d and Tullow has guided to 2018 gross production of 64 MBo/d, which is 7% above JPMe at 60 MBo/d. There appears to be potential upside potential as production has consistently eclipsed 70 MBo/d over the past few months. Tullow contracted the Maersk Venturer drilling rig for a four-year period and began drilling a development well at the Ntomme field. Results from the Ntomme field are anticipated later this summer. In 2018, Tullow also expects the initial start of gas sales, anticipating gross gas production of 4.2 MBoe/d.

Factor 8—Optionality to Mozambique project

Mozambique project provides long-term growth visibility

APC appears to be making tangible progress on the Mozambique project with the completion of the legal and contractual framework, onsite preparation work, and agreements on 5.1 MMtpa of volumes (APC needs ~8.5 MMtpa to move forward with project financing). Given improving supply-demand conditions in the global LNG market and current negotiations with multiple buyers underway, APC appears sanguine it would fill the remaining volumes necessary for project financing by year-end 2018. Including project financing and its 26.5% working interest, APC estimates \$2.0 billion in equity cash outflows during the four-year estimated construction period. Management recognizes the market's ambivalence toward the project given the company's size and significant cost overruns reported by industry over the past LNG building cycle, but believes the combination of world-class reservoir quality, the proximity of the Golfinho/Atum fields to shore, and the sharing of common facilities with the XOM led Area 4 consortium should partially mitigate the inherent risk of this project. APC views Mozambique as an attractive longer dated project that provides long-term visibility to the story, while not detracting from the company's unique cash return story given the measured level of investment during the construction phase of the project.

Factor 9—Management is focused on narrowing perceived valuation discrepancy associated with strategic ownership of Western Gas

APC realizes significant operational benefits from its integrated upstream and midstream model. However, management believes its ownership of the Western Gas MLP is under-appreciated by the market and believes it can narrow this perceived valuation discrepancy by clearly demonstrating to the market the uplift to APC's recurring cash flow profile from the WGP/WES entities. This uplift includes ~$300 MM of distributions to APC that are expected to grow at 16% through 2019, with the reasonable assumption that distributions could grow at a similar clip for years to come supported by the DJ and Delaware Basins, periodic drop-downs to the MLP, and the monetization of APC owned units. The company estimates that it will generate ~$300 MM of midstream EBITDA at the APC level, which could support ~$2.4 billion in cash for APC shareholders (assuming an 8x drop-down multiple). Finally, APC owns $6.1+ billion in marketable securities in WGP/WES that could be opportunistically monetized to return cash to APC shareholders. The company is evaluating several options to help enable this multi-billion dollar valuation discount to narrow through improved liquidity. Importantly, management sees this challenge as solvable and is seeking a solution that is best for APC, while preserving value for the MLP.

Factor 10—Upside to consensus forecasts.

We are forecasting 2018 and 2019 oil production of 388 MBo/d and 444 MBo/d, respectively, which is 1% and 4% above consensus forecasts driven by strength in the company's U.S. onshore portfolio and the TEN field in Ghana. Our revised 2018 and 2019 EPS/CFPS estimates are $1.93/$12.24 and $2.14/$14.02 from $1.70/$11.98 and $1.66/$13.48**.** Our 2018 and 2019 cash flow estimates are 6% and 10% above consensus. We are raising our 12-month target price to $72 from $70 per share, which assumes 5.6x our 2019E EV/EBITDA and is at parity with our revised NAV at the strip.

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Figure 31: APC Operating Summary

Anadarko Petroleum (APC)			2017E					2018E					2019E	2020E	2021E
JP Morgan Research Estimates	2015	2016	1Q	2Q	3Q	4Q	Year	1Q	2Q	3Q	4Q	Year	Year	Year	Year
Operating Summary															
Benchmark Prices															
Natural Gas ($/Mcf)	**$2.67**	**$2.40**	$1.94	$1.07	$3.00	$2.91	**$2.23**	$2.98	$2.73	$2.84	$2.92	**$2.87**	**$2.79**	**$2.78**	**$2.78**
Crude Oil (WTI)--($/Bbl)	**$48.71**	**$43.34**	$51.78	$48.25	$48.15	$55.37	**$50.89**	$60.87	$64.41	$64.03	$62.41	**$62.93**	**$59.21**	**$55.62**	**$55.62**
NGLs ($/Bbl)	**$19.35**	**$19.50**	$27.96	$23.64	$26.97	$29.90	**$27.12**	$34.08	$32.85	$32.65	$35.57	**$33.79**	**$30.49**	**$28.64**	**$28.64**
Realized Prices (including hedges)															
Natural Gas ($/Mcf)	**$2.72**	**$2.04**	$3.00	$2.84	$2.69	$2.63	$2.82	$2.64	$2.33	$2.36	$2.54	$2.47	$2.38	$2.36	$2.45
Crude Oil ($/Bbl)	**$45.00**	**$42.12**	$49.23	$47.17	$47.37	$54.97	$49.86	$59.72	$61.44	$61.26	$60.03	$60.61	$57.94	$54.35	$54.36
NGLs ($/Bbl)	**$17.02**	**$19.33**	$26.57	$24.82	$31.07	$34.99	$29.21	$33.08	$31.25	$31.05	$34.57	$32.54	$29.17	$27.32	$27.32
Daily Production															
Natural Gas (MMcfd)	**2,334**	**2,093**	1,859	1,238	1,086	1,064	**1,312**	1,069	1,078	1,105	1,160	**1,103**	**1,230**	**1,374**	**1,539**
Crude Oil (Mbbl/d)	**317**	**316**	367	331	353	367	**355**	365	381	395	410	**388**	**444**	**489**	**530**
NGLs (Mbbl/d)	**130**	**128**	118	94	92	93	**99**	98	96	104	110	**102**	**114**	**117**	**135**
Total Production (MBoe/d)	**836**	**793**	795	631	626	637	**672**	641	656	684	713	**674**	**763**	**835**	**921**
% Growth (YoY)	**-0.7%**	**-5.2%**	-3.9%	-20.3%	-19.7%	-17.6%	**-15.2%**	-19.3%	3.9%	9.2%	11.9%	**0.2%**	**13.3%**	**9.4%**	**10.3%**
% Oil Growth (YoY)	**9.1%**	**-0.4%**	16.5%	11.8%	11.4%	9.2%	**12.2%**	-0.5%	15.0%	12.0%	11.8%	**9.5%**	**14.5%**	**10.2%**	**8.3%**
Production Summary															
Natural Gas (Bcf)	**852**	**766**	167	113	100	98	**479**	96	98	102	107	**403**	**449**	**501**	**562**
Crude Oil (MMBo)	**116**	**116**	33	30	32	34	**129**	33	35	36	38	**142**	**162**	**179**	**193**
NGLs (MMBo)	**47**	**47**	11	9	8	9	**36**	9	9	10	10	**37**	**42**	**43**	**49**
Total Production (MMBoe)	**305**	**290**	72	57	58	59	**245**	58	60	63	66	**246**	**279**	**305**	**336**
% Gas	**47%**	**44%**	39%	33%	29%	28%	**33%**	28%	27%	27%	27%	**27%**	**27%**	**27%**	**28%**
% Oil	**38%**	**40%**	46%	52%	56%	58%	**53%**	57%	58%	58%	58%	**58%**	**58%**	**59%**	**58%**
% NGL	**16%**	**16%**	15%	15%	15%	15%	**15%**	15%	15%	15%	15%	**15%**	**15%**	**14%**	**15%**

Source: J.P. Morgan estimates, Company data.

Figure 32: APC Summary Income Statement

Anadarko Petroleum (APC)			2017E					2018E					2019E	2020E	2021E
JP Morgan Research Estimates	2015	2016	1Q	2Q	3Q	4Q	Year	1Q	2Q	3Q	4Q	Year	Year	Year	Year
Summary Income Statement															
E&P Revenue (includes hedges)	**$8,260**	**$7,153**	$2,454	$1,955	$2,101	$2,459	**$8,969**	$2,561	$2,693	$2,832	$2,940	**$11,026**	**$11,910**	**$12,277**	**$13,450**
Marketing and Midstream	**$438**	**$716**	$1,313	$761	$395	$470	**$2,939**	$645	$671	$704	$737	**$2,758**	**$3,184**	**$3,531**	**$3,872**
Total Revenue	**$8,698**	**$7,869**	$3,767	$2,716	$2,496	$2,929	**$11,908**	$3,207	$3,364	$3,536	$3,677	**$13,783**	**$15,094**	**$15,808**	**$17,322**
Operating Expenses															
Oil and Gas Operating Expense (LOE)	**$1,014**	**$811**	$258	$233	$257	$252	**$1,000**	$277	$281	$293	$302	**$1,152**	**$1,282**	**$1,402**	**$1,547**
Oil and Gas Transportation and Other	**$1,185**	**$1,002**	$249	$229	$220	$216	**$914**	$208	$218	$230	$240	**$895**	**$1,017**	**$1,112**	**$1,227**
Exploration	**$2,644**	**$946**	$1,085	$535	$751	$170	**$2,541**	$110	$96	$98	$92	**$395**	**$557**	**$731**	**$874**
Gathering, Processing, and Marketing	**$1,054**	**$1,087**	$351	$359	$398	$452	**$1,560**	$450	$451	$469	$486	**$1,856**	**$2,062**	**$2,316**	**$2,623**
General and Administrative	**$1,221**	**$1,440**	$269	$291	$280	$235	**$1,075**	$245	$245	$250	$250	**$990**	**$1,000**	**$1,020**	**$1,040**
Depreciation, Depletion, and Amortization	**$4,603**	**$4,301**	$1,115	$1,037	$1,083	$1,044	**$4,279**	$1,082	$1,117	$1,170	$1,214	**$4,583**	**$5,155**	**$5,638**	**$6,221**
Other Taxes (Production Taxes)	**$553**	**$536**	$155	$135	$159	$133	**$582**	$166	$175	$184	$191	**$717**	**$774**	**$798**	**$874**
Impairments	**$5,075**	**$227**	$373	$10	$0	$25	**$408**	$0	$0	$0	$0	**$0**	**$0**	**$0**	**$0**
Other	**$158**	**$118**	$22	$12	$123	$64	**$221**	$9	$12	$13	$13	**$46**	**$56**	**$61**	**$67**
Total	**$17,507**	**$10,468**	$3,877	$2,841	$3,271	$2,591	**$12,580**	$2,547	$2,594	$2,706	$2,787	**$10,634**	**$11,904**	**$13,079**	**$14,475**
Operating Income (EBIT)	**($8,809)**	**($2,599)**	($110)	($125)	($775)	$338	**($672)**	$660	$770	$830	$890	**$3,150**	**$3,190**	**$2,729**	**$2,847**
Interest expense	**825**	**890**	223	227	230	252	**932**	239	237	237	237	**951**	**898**	**894**	**844**
Other	**56**	**340**	(155)	20	61	158	**84**	0	0	0	0	**0**	**0**	**0**	**0**
Total Other (Income) Expense	**$881**	**$1,230**	$68	$247	$291	$410	**$1,016**	$239	$237	$237	$237	**$951**	**$898**	**$894**	**$844**
Pre-tax income	**($9,690)**	**($3,829)**	($178)	($372)	($1,066)	($72)	**($1,688)**	$421	$532	$593	$653	**$2,199**	**$2,292**	**$1,835**	**$2,003**
Less: Income taxes	**(2,877)**	**(1,021)**	97	(38)	(425)	(1,111)	**(1,477)**	185	216	232	246	**879**	**879**	**722**	**747**
Less: Preferred dividends	**0**	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**	**0**	**0**
Less: NCI	**(64)**	**263**	43	81	58	63	**245**	70	80	90	90	**330**	**340**	**360**	**380**
Plus: Discontinued operatioons	**0**	**0**	0	0	0	0	**0**	0	0	0	0	**0**	**0**	**0**	**0**
Reported net income	**($6,749)**	**($3,071)**	($318)	($415)	($699)	$976	**($456)**	$166	$237	$270	$317	**$990**	**$1,073**	**$754**	**$875**
Special items (after-tax)	**4,780**	**1,467**	(12)	(8)	272	(870)	**(618)**	0	0	0	0	**0**	**0**	**0**	**0**
Adjusted Net Income	**($1,969)**	**($1,604)**	($330)	($423)	($427)	$106	**($1,074)**	$166	$237	$270	$317	**$990**	**$1,073**	**$754**	**$875**
Adjusted EPS (Diluted)	**($3.88)**	**($3.07)**	($0.60)	($0.77)	($0.77)	$0.20	**($1.96)**	$0.32	$0.46	$0.53	$0.63	**$1.93**	**$2.14**	**$1.50**	**$1.74**
Basic Shares	**508**	**522**	551	551	553	537	**548**	524	517	509	502	**513**	**502**	**502**	**502**
Diluted Shares	**508**	**522**	551	551	553	537	**548**	524	517	509	502	**513**	**502**	**502**	**502**

Source: J.P. Morgan estimates, Company data.

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Figure 33: APC Summary Cash Flow Statement

Anadarko Petroleum (APC)					2017E					2018E			2019E	2020E	2021E
JP Morgan Research Estimates	2015	2016	1Q	2Q	3Q	4Q	Year	1Q	2Q	3Q	4Q	Year	Year	Year	Year
Summary Cash Flow Statement															
Discretionary Cash Flow															
Adjusted Net Income including NCI	($2,033)	($1,341)	($287)	($342)	($369)	$169	($829)	$236	$317	$360	$407	$1,320	$1,413	$1,114	$1,255
DD&A	$4,603	$4,301	$1,115	$1,037	$1,083	$1,044	$4,279	$1,082	$1,117	$1,170	$1,214	$4,583	$5,155	$5,638	$6,221
Deferred income taxes	($3,152)	($1,238)	($660)	$488	($854)	($1,143)	($2,169)	$36	$46	$54	$64	$201	$217	$168	$197
Other Non Cash Charges	5,239	1,354	521	388	766	1,359	3,034	49	43	44	41	178	251	329	393
Discretionary Cash Flow from Operations	$4,657	$3,076	$689	$1,571	$626	$1,429	$4,315	$1,403	$1,523	$1,629	$1,726	$6,281	$7,036	$7,249	$8,068
Changes in working capital	71	104	434	(714)	13	(39)	(306)	0	0	0	0	0	0	0	0
Other Items	(1,399)	(180)	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Cash Provided By Operatng Activities	($1,877)	$3,000	$1,123	$857	$639	$1,390	$4,009	$1,403	$1,523	$1,629	$1,726	$6,281	$7,036	$7,249	$8,068
Total CAPEX	($7,407)	($3,314)	($1,255)	($1,210)	($1,331)	($1,504)	($5,300)	($1,556)	($1,620)	($1,130)	($1,323)	($5,628)	($5,404)	($6,045)	($6,529)
Free Cash Flow	($9,284)	($314)	($132)	($353)	($692)	($114)	($1,291)	($152)	($98)	$499	$404	$653	$1,633	$1,203	$1,538
Discretionary cash flow per share	$9.16	$5.90	$1.25	$2.85	$1.13	$2.66	$7.87	$2.68	$2.95	$3.20	$3.44	$12.24	$14.02	$14.45	$16.08
Debt adjusted cash flow	$3,883	$3,670	$1,468	$1,061	$777	$1,542	$4,847	$1,537	$1,664	$1,773	$1,874	$6,849	$7,589	$7,789	$8,596
EBITDAX	$4,301	$4,075	$1,615	$1,216	$1,235	$1,666	$5,732	$1,852	$1,982	$2,098	$2,196	$8,127	$8,903	$9,099	$9,943
EBITDA	$1,657	$3,129	$530	$681	$484	$1,496	$3,191	$1,742	$1,886	$2,000	$2,104	$7,733	$8,345	$8,367	$9,069

Source: Company reports and J.P. Morgan estimates.

Figure 34: APC Summary Balance Sheet

Anadarko Petroleum (APC)					2017E					2018E			2019E	2020E	2021E
JP Morgan Research Estimates	2015	2016	1Q	2Q	3Q	4Q	Year	1Q	2Q	3Q	4Q	Year	Year	Year	Year
Condensed Balance Sheet															
Cash	$939	$3,184	$5,831	$6,008	$5,251	$4,553	$4,553	$4,225	$3,629	$3,536	$3,349	$3,349	$3,540	$4,181	$4,338
Total Assets	$46,414	$45,564	$44,693	$44,348	$43,128	$42,086	$42,086	$41,831	$41,539	$41,406	$41,328	$41,328	$41,467	$42,215	$42,380
Total Debt	$15,718	$15,281	$15,284	$15,436	$15,424	$15,547	$15,547	$15,547	$15,433	$15,433	$15,433	$15,433	$14,533	$14,533	$13,733
Total Shareholder Equity	$12,819	$12,212	$11,856	$11,472	$10,782	$10,696	$10,696	$10,356	$10,088	$9,856	$9,673	$9,673	$10,244	$10,496	$10,870
Net Debt	$14,779	$12,097	$9,453	$9,428	$10,173	$10,994	$10,994	$11,322	$11,804	$11,897	$12,084	$12,084	$10,993	$10,352	$9,395
Debt-To-Equity	123%	125%	129%	135%	143%	145%	145%	150%	153%	157%	160%	160%	142%	138%	126%
Net Debt-To-Equity	115%	99%	80%	82%	94%	103%	103%	109%	117%	121%	125%	125%	107%	99%	86%
Debt-to-Cash Flow (Annualized)	-8.4x	5.1x	3.4x	4.5x	6.0x	2.8x	3.9x	2.8x	2.5x	2.4x	2.2x	2.5x	2.1x	2.0x	1.7x
Net Debt-to-Cash Flow (Annualized)	-7.9x	4.0x	2.1x	2.8x	4.0x	2.0x	2.7x	2.0x	1.9x	1.8x	1.8x	1.9x	1.6x	1.4x	1.2x
Debt-to-EBITDAX (Annualized)	3.7x	3.7x	2.4x	3.2x	3.1x	2.3x	2.7x	2.1x	1.9x	1.8x	1.8x	1.9x	1.6x	1.6x	1.4x
Net Debt-to-EBITDAX (Annualized)	3.4x	3.0x	1.5x	1.9x	2.1x	1.6x	1.9x	1.5x	1.5x	1.4x	1.4x	1.5x	1.2x	1.1x	0.9x
LTM Debt-to-EBITDAX	3.7x	3.7x	3.1x	2.9x	2.8x	2.7x	2.7x	2.6x	2.3x	2.0x	1.9x	1.9x	1.6x	1.6x	1.4x
LTM Net Debt-to-EBITDAX	3.4x	3.0x	1.9x	1.8x	1.9x	1.9x	1.9x	1.9x	1.8x	1.6x	1.5x	1.5x	1.2x	1.1x	0.9x

Source: J.P. Morgan estimates, Company data.

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Figure 35: APC NAV Summary

Anadarko (APC) — **RATING: OVERWEIGHT**

Net Asset Value Estimate After-Tax

Oil & Gas Properties	Total	NYMEX			JPM Deck		
Proved Developed Reserves as of 12/31/17	(MMBoe)	($/Boe)	($MM)	($/Share)	($/Boe)	($MM)	($/Share)
United States	979	$16.67	$16,310	$32.50	$16.59	$16,233	$32.40
International	149	$21.04	$3,144	$6.30	$20.93	$3,127	$6.20
Total Proved Developed Assets			**$19,455**	**$38.77**		**$19,360**	**$38.58**
Other Assets			**($MM)**	**($/Share)**		**($MM)**	**($/Share)**
Western Gas Midstream Ownership	-		$5,456	$10.90		$5,438	$10.80
Anadarko Midstream			$2,700	$5.40		$2,700	$5.40
Total Other Assets			**$8,156**	**$16.26**		**$8,138**	**$16.22**
Balance Sheet & Other			**($MM)**	**($/Share)**		**($MM)**	**($/Share)**
Long-Term Debt			$15,433	$30.80		$15,433	$30.80
Cash & Equivalents			($3,349)	($6.70)		($3,424)	($6.80)
Total Balance Sheet & Other			**$12,084**	**$24.10**		**$12,009**	**$23.90**
Proven Developed Net Asset Value			**$15,527**	**$30.90**		**$15,489**	**$30.90**
Oil & Gas Properties	**Total**						
Undeveloped / Unproven Reserves	**(MMBoe)**	**($/Boe)**	**($MM)**	**($/Share)**	**($/Boe)**	**($MM)**	**($/Share)**
United States - Wattenberg	1,743	$5.23	$9,107	$18.10	$5.14	$8,965	$17.90
United States - Delaware Basin	2,936	$3.45	$10,130	$20.20	$3.36	$9,872	$19.70
United States - Greater Natural Buttes	360	$0.00	$0	$0.00	$0.00	$0	$0.00
Mozambique	2,532	$0.41	$1,032	$2.10	$0.40	$1,021	$2.00
Ghana TEN Complex	280	$2.10	$589	$1.20	$2.08	$584	$1.20
Total Undeveloped / Unproven			**$20,858**	**$41.60**		**$20,442**	**$40.7**
Proved Plus Undeveloped Net Asset Value			**$36,385**	**$72.50**		**$35,931**	**$71.60**

Diluted Shares Out. (MM) 502

Last Price	**$63**
Price-to-NAV	**88%**
NAV	**$72**
PD NAV-to-NAV	**43%**

Source: J.P. Morgan estimates, Company data.

Investment Thesis, Valuation and Risks

Anadarko Petroleum *(Overweight; Price Target: $72.00)*

Investment Thesis

We see several emerging positives that could support more upside in the stock (APC trades at a ~13.8% 2020E sustaining FCF yield vs. group average ~9.1%). We believe near-term and long-term oil growth outlooks are largely intact, with the near-term outlook buoyed by surprising strength in the GoM and long-term growth supported by visibility in the Delaware and DJ Basins. Meanwhile, APC's $4.5+ billion cash hoard provides optionality to support higher levels of cash return to shareholders. APC has one of the highest quality franchise assets at Wattenberg, and its U.S. onshore position is further enhanced by its Delaware Basin position. We believe a key catalyst for the stock is the potential shift into development mode in the Delaware Basin Wolfcamp play, where APC has significant running room in the core. In particular, we believe APC's Delaware Basin volumes could hit a meaningful growth inflection point by mid-year 2018 when it completes its midstream backbone project.

Valuation

Using our NAV methodology, we calculate a net asset value of $72 per share for APC at the strip. We believe an Overweight rating on APC is justified, as the stock is trading at a discount to our NAV. Our Dec-18 price target of $72 assumes that the stock trades at parity with our NAV estimate. In summary, we value proved developed NAV (net of liabilities) at ~$30.90 per share and undeveloped/unproven reserves at ~$40.70 per share to arrive at a total proved developed and undeveloped net asset value of $72 per share.

Risks to Rating and Price Target

- Post the Firestone incident, the regulatory and legal overhang could linger over APC's DJ Basin asset, which represents approximately 20% of our NAV estimate. The DJ Basin has historically had infrastructure issues including delays, high-line pressures, and a lack of natural gas processing capacity, which have all curtailed production at some point over the past several years.
- Post the Freeport-McMoran deepwater purchase, APC has increased its leverage to the U.S. GoM, which could lead to higher volatility in production levels and higher asset concentration risk, particularly at the Lucius development.
- There could be a delay in getting the midstream infrastructure ready, which is the key assumption that underpins our APC growth rates and rate of change in Delaware Basin well productivity.
- Continued oil price volatility could negatively impact play economics and ultimately corporate level cash flow, which could cause the stock to underperform our expectations..

Anadarko Petroleum: Summary of Financials

Income Statement - Annual	FY16A	FY17A	FY18E	FY19E	FY20E
Revenue	**7,869**	**11,908**	**13,783**	**15,094**	**-**
SG&A	(1,440)	(1,075)	(990)	(1,000)	-
Adj. EBITDAX	**4,075**	**5,732**	**8,127**	**8,903**	**-**
Exploration expense	(946)	(2,541)	(395)	(557)	-
Adj. EBITDA	**3,129**	**3,191**	**7,733**	**8,345**	**-**
D&A	(4,301)	(4,279)	(4,583)	(5,155)	-
Adj. EBIT	**(1,172)**	**(1,088)**	**3,150**	**3,190**	**-**
Net Interest	(890)	(932)	(951)	(898)	-
PBT	**(3,829)**	**(1,688)**	**2,199**	**2,292**	**-**
Tax	1,021	1,477	(879)	(879)	-
Minority Interest	(263)	(245)	(330)	(340)	-
Adj. Net Income	**(1,604)**	**(1,074)**	**990**	**1,073**	**-**
Reported EPS	(5.89)	(0.83)	1.93	2.14	-
Adj. EPS	**(3.07)**	**(1.96)**	**1.93**	**2.14**	**-**
DPS	**-**	**-**	**-**	**-**	**-**
Payout ratio	-	-	-	-	-
Shares outstanding	522	548	513	502	-

Income Statement - Quarterly	1Q18E	2Q18E	3Q18E	4Q18E
Revenue	**3,207**	**3,364**	**3,536**	**3,677**
SG&A	(245)	(245)	(250)	(250)
Adj. EBITDAX	**1,852**	**1,982**	**2,098**	**2,196**
Exploration expense	(110)	(96)	(98)	(92)
Adj. EBITDA	**1,742**	**1,886**	**2,000**	**2,104**
D&A	(1,082)	(1,117)	(1,170)	(1,214)
Adj. EBIT	**660**	**770**	**830**	**890**
Net Interest	(239)	(237)	(237)	(237)
PBT	**421**	**532**	**593**	**653**
Tax	(185)	(216)	(232)	(246)
Minority Interest	(70)	(80)	(90)	(90)
Adj. Net Income	**166**	**237**	**270**	**317**
Reported EPS	0.32	0.46	0.53	0.63
Adj. EPS	**0.32**	**0.46**	**0.53**	**0.63**
DPS	**-**	**-**	**-**	**-**
Payout ratio	-	-	-	-
Shares outstanding	524	517	509	502

Balance Sheet & Cash Flow	FY16A	FY17A	FY18E	FY19E	FY20E
Cash and cash equivalents	3,184	4,553	3,349	3,540	-
Accounts receivable	1,728	1,829	1,829	1,829	-
Inventories	-	-	-	-	-
Other current assets	354	380	380	380	-
Current assets	**5,266**	**6,762**	**5,558**	**5,749**	**-**
PP&E	32,168	27,451	27,897	27,845	-
LT investments	-	-	-	-	-
Other non current assets	8,130	7,873	7,873	7,873	-
Total assets	**45,564**	**42,086**	**41,328**	**41,467**	**-**
Short term borrowings	-	-	-	-	-
Payables	2,288	1,995	1,995	1,995	-
Other short term liabilities	1,040	1,911	1,911	1,911	-
Current liabilities	**3,328**	**3,906**	**3,906**	**3,906**	**-**
Long-term debt	15,281	15,547	15,433	14,533	-
Other long term liabilities	11,458	8,843	9,221	9,690	-
Total liabilities	**30,067**	**28,296**	**28,560**	**28,129**	**-**
Shareholders' equity	12,212	10,696	9,673	10,244	-
Minority interests	3,285	3,094	3,094	3,094	-
Total liabilities & equity	**45,564**	**42,086**	**41,328**	**41,467**	**-**
BVPS	**23.41**	**19.52**	**18.86**	**20.42**	**-**
y/y Growth	*(7.3%)*	*(16.6%)*	*(3.4%)*	*8.3%*	-
Net debt/(cash)	12,097	10,994	12,084	10,993	-
Cash flow from operating activities	**3,000**	**4,009**	**6,281**	**7,036**	**-**
o/w Depreciation & amortization	4,301	4,279	4,583	5,155	-
o/w Changes in working capital	104	(306)	0	0	-
Cash flow from investing activities	**(2,762)**	**(482)**	**(3,799)**	**(4,306)**	**-**
o/w Capital expenditure	(3,505)	(4,344)	(4,399)	(4,606)	-
as % of sales	*44.5%*	*36.5%*	*31.9%*	*30.5%*	-
Cash flow from financing activities	**2,007**	**(1,613)**	**(2,457)**	**(1,742)**	**-**
o/w Dividends paid	(105)	(112)	(513)	(502)	-
o/w Net debt issued/(repaid)	(790)	208	(114)	(900)	-
Net change in cash	**2,245**	**1,914**	**26**	**989**	**-**
Adj. Free cash flow to firm	**(314)**	**(1,291)**	**653**	**1,633**	**-**
y/y Growth	*(96.0%)*	*311.1%*	*(150.6%)*	*150.0%*	-

Ratio Analysis	FY16A	FY17A	FY18E	FY19E	FY20E
ROE	(12.8%)	(9.4%)	9.7%	10.8%	-
ROA	(3.5%)	(2.4%)	2.4%	2.6%	-
ROCE	(5.3%)	(7.6%)	7.4%	7.9%	-
Net debt/equity	78.1%	79.7%	94.6%	82.4%	-
Interest cover (x)	3.5	3.4	8.1	9.3	-
P/E (x)	NM	NM	32.7	29.5	-
EV/EBITDA (x)	15.3	14.6	6.2	5.6	-
P/DCF (x)	10.7	8.0	5.1	4.5	-
EV/BOE (x)	-	-	-	-	-
EV/EBITDAX (x)	11.7	8.1	5.9	5.2	-
Dividend yield	-	-	-	-	-
Tax rate	(26.7%)	(87.5%)	40.0%	38.4%	-

Sector data	FY16A	FY17A	FY18E	FY19E	FY20E
Natural gas price - $/mcf	2.40	2.23	2.87	2.79	-
Crude oil (WTI) -$/bbl	43.34	50.89	62.93	59.21	-
Daily oil production (mbblpd)	316	355	388	444	-
NGLs Production (MMbbl)	46.85	36.22	37.21	41.68	-
Daily gas production (mmcfpd)	2,093	1,312	1,103	1,230	-
Daily production (mboed)	-	-	-	-	-
Total Production (mmboe)	290	245	246	279	-
Proved reserves (mmboe)	-	-	-	-	-
Unit costs per boe					
Lease operating expense	-2.79	-4.07	-4.69	-	-
Taxes other than income	-1.85	-2.37	-2.91	-	-
DD&A	-14.82	-17.44	-18.64	-	-
G&A	-4.96	-4.38	-4.03	-	-
Exploration expense	-3.26	-10.35	-1.60	-	-
Operating margin/boe	-6.90	-6.69	9.14	-	-
Cash margin/boe	7.93	10.74	27.78	-	-
EBITDAX margin	51.8%	48.1%	59.0%	59.0%	-
Discretionary cash flow	3,076	4,315	6,281	7,036	-
DCF/share	5.90	7.87	12.24	14.02	-

Source: Company reports and J.P. Morgan estimates.
Note: $ in millions (except per-share data).Fiscal year ends Dec. o/w - out of which

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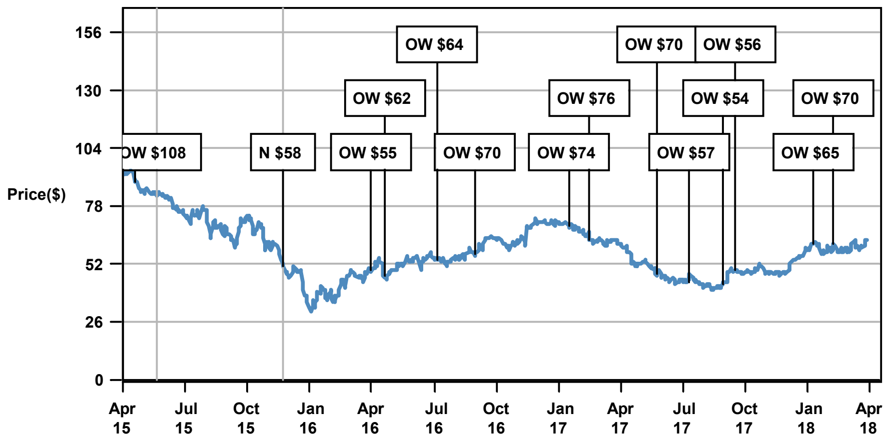

Source: Bloomberg and J.P. Morgan; price data adjusted for stock splits and dividends.
Initiated coverage May 06, 2002.
Break in coverage Jun 05, 2015 - Dec 09, 2015.

Date	Rating	Share Price ($)	Price Target ($)
04-May-15	OW	89.32	108.00
09-Dec-15	N	50.83	58.00
15-Apr-16	OW	49.46	55.00
04-May-16	OW	47.02	62.00
21-Jul-16	OW	54.17	64.00
15-Sep-16	OW	56.93	70.00
31-Jan-17	OW	69.53	74.00
02-Mar-17	OW	63.21	76.00
07-Jun-17	OW	47.17	70.00
24-Jul-17	OW	44.21	57.00
14-Sep-17	OW	43.53	54.00
02-Oct-17	OW	49.27	56.00
24-Jan-18	OW	61.43	65.00
22-Feb-18	OW	60.82	70.00

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