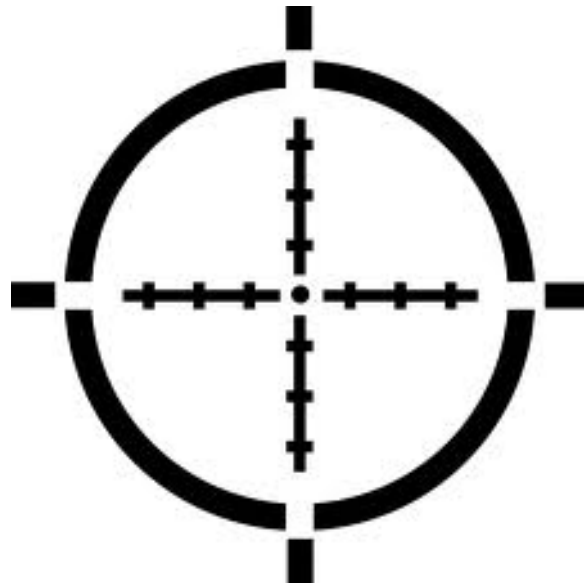


Chesapeake Energy
Corporation
Client Report
DangerZone Consulting



Shiwei Zhang

Andrew Helgren

Nicole Bauthier

Professor Likens Senior Seminar

Contents

Executive Summary	3
History and Overview	5
Financial Analysis	9
Overview	9
Balance Sheet Concerns	10
New Leadership	11
Energy Market Volatility	13
Comparative Analysis	14
Stock Performance	15
Conclusion	16
Five Forces Analysis	18
Market Definition	18
Internal Rivalry	18
Barriers to Entry	19
Substitutes and Complements	19
Supplier and Buyer Power	20
SWOT Analysis	22
Strength	22
Weakness	24
Opportunities	25
Threats	26
Strategic Recommendations	28
Improve Balance Sheet	28
Form Joint Ventures – the Capital-light Strategy	29
Focus on Core Business	29
Lobby Government and Legislators	30
Invest in New Energy	31



Executive Summary

Chesapeake Energy Corporation (the Company), named after the childhood haunt of the company's founder, is the second largest natural gas producer and 10th largest oil and natural gas liquids producer in the US. In 2013, the Company has proved reserves of 2.678 billion barrels of oil equivalents (bboe). The Company's operations are focused on discovering and developing a resource base of unconventional natural gas and oil assets onshore in the US.

Over the years, Chesapeake Energy has developed expertise and proprietary technologies in dealing with unconventional reservoirs. In the past five years the Company grew its assets at 7% CAGR and its revenue at 18% CAGR. Chesapeake adopted an aggressive growth strategy through leveraged acquisition of natural gas and oil assets, which has substantially deteriorated Chesapeake's balance sheet over the years. Currently the Company is at a weak financial position where current assets cover only 65% of current liabilities and capital expenditure exceeds EBITDA in each period. The Company has to borrow to make interest payment. Additionally, Chesapeake faces legislative challenges in its human safety and environmental protection actions. In particular, the Company's practice of hydraulic fracturing in shale gas drilling is being questioned and even banned in several state and local jurisdictions. Lastly, one of Chesapeake's ultimate nightmares is a technology breakthrough in alternative energy sources that will make fossil fuels obsolete. The Company should make an effort to break into the new energy industry.

In light of the risks and opportunities discussed above, Chesapeake Energy Corporation should accomplish the following to put itself into the right direction: de-lever balance sheet, form joint ventures, lobby the government, and invest in new energy startups.

First of all, Chesapeake should reorganize corporate structure and capital structure to de-lever its balance sheet. The Company can achieve this goal by selling nonstrategic natural gas and oil assets and noncore business operations. Chesapeake should do so as quickly as possible to take



advantage of the record-high bond and equity markets, which are expected to change given the Fed's recent announcement to scale back asset purchasing efforts.

Secondly, Chesapeake should adopt a capital-light joint venture growth strategy to improve its cash flows in each period. Rather than leveraging on its assets, the Company should leverage on its advanced drilling technology in unconventional reservoirs in exchange for capital contribution from its joint partners. Chesapeake can serve as field operators to provide the drilling technology.

Thirdly, Chesapeake should lobby the government and legislators to favor natural gas over its substitutes on two fronts: environmental benefits and national security. Research shows that natural gas generates the least amount of greenhouse gases given the same energy output¹. A recent BP report² shows that with the development of shale natural gas, the US may become energy self-sufficient by 2035. The critical year will be 2027 when natural gas surpasses oil as the leading fuel in the US energy consumption. Chesapeake should lobby the government to build infrastructure early in order to get ready for the coming century of natural gas.

Lastly, Chesapeake should form a venture capital team to invest in new energy startups across the world. This way the Company can hedge away the risk of becoming completely obsolete overnight.

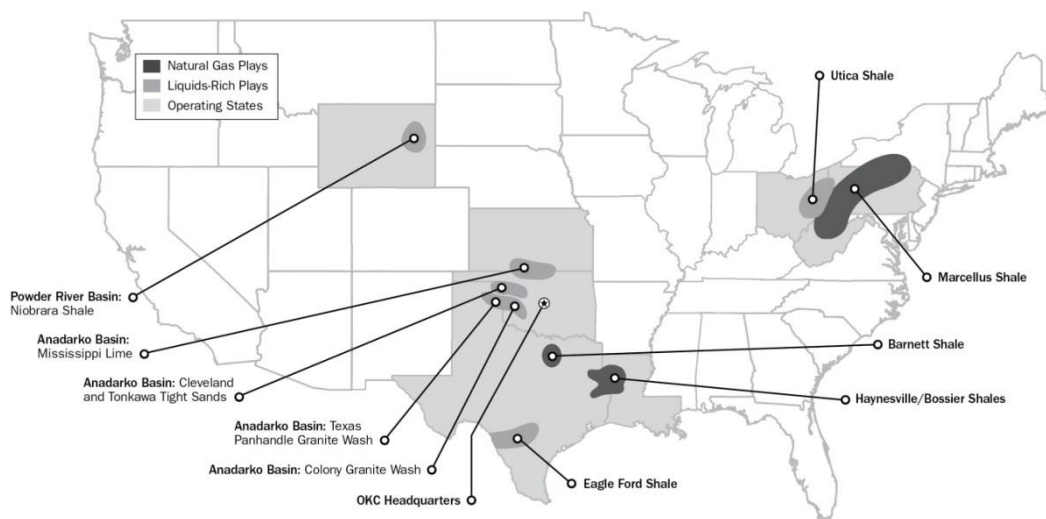
¹ <http://naturalgas.org/environment/naturalgas/>

² http://www.bp.com/content/dam/bp/pdf/Energy-economics/Energy-Outlook/Energy_Outlook_2035_booklet.pdf

History and Overview

Chesapeake Energy is the second largest producer of natural gas and the 10th largest producer of oil and natural gas liquids in the US. The company is headquartered in Oklahoma City with 10,800 employees. Chesapeake builds oil and natural gas reserves through the acquisition and development of oil and gas assets across the US. In 2013 the company had estimated proved reserves of 2.678 billion barrels of oil equivalent (bboe). Chesapeake has exploration and production of assets in Appalachia, the Mid-Continent, the Barnett, Bossier and Haynesville shale plays, the Permian Basin and the Rockies.

Map of Chesapeake's oil, natural gas and natural gas liquids properties



Source: Company 10K

Chesapeake has vertically integrated many of its operations and owns major marketing, compression, midstream and oilfield services businesses. Chesapeake Energy Marketing provides natural gas, oil, and natural gas liquids (NGL) marketing services, including commodity price structuring, contract administration and nomination services for Chesapeake and other third-party clients. Similarly, the Company formed Chesapeake Oilfield Services (COS) to help with drilling process on oilfields for itself and third-party clients. COS provides services from renting tools and hauling water to pressure pumping and contract drilling. Chesapeake's oil and



natural gas production is sold primarily under short term or spot price contracts to various intermediaries markets, end markets and pipelines.

Chesapeake was founded in 1989 by Aubrey McClendon and former President and COO Tom Ward. Since the beginning, the Company has been strategically focusing on drilling horizontal natural gas wells in unconventional reservoirs. Chesapeake started by building sizable leasehold positions in the Golden Trend and Sholem Alechem fields of Oklahoma and in the Giddings field of Texas. The operational success of the beginning years helped Chesapeake go public at NASDAQ in 1993. The company later transferred to the NYSE in 1995.

In 1994, Chesapeake made a major natural gas discovery in the Deep Giddings portion of Austin Chalk trend, which fueled a significant growth period for the company. From 1994 to 1996, Chesapeake delivered the highest growth rate in the industry by continuing to develop new wells. However, after 1996, Chesapeake experienced major setback when it attempted to copy the Deep Giddings play to other areas, which failed due to both geological differences and concurrent historical low prices of natural gas and oil in the market.

In 2000, Chesapeake made a strategic decision to redirect itself from being a solely drillbit-oriented, short reserve life, Austin Chalk-focused natural gas producer to a company that targeted a more diversified, longer reserve life and lower risk asset base. The company also for the first time incorporated acquisition into its business strategy. In 1997, Chesapeake bought energy company AnSon Production. In subsequent years, the Company acquired oil and gas producer Hugoton Energy and DLB Oil & Gas.

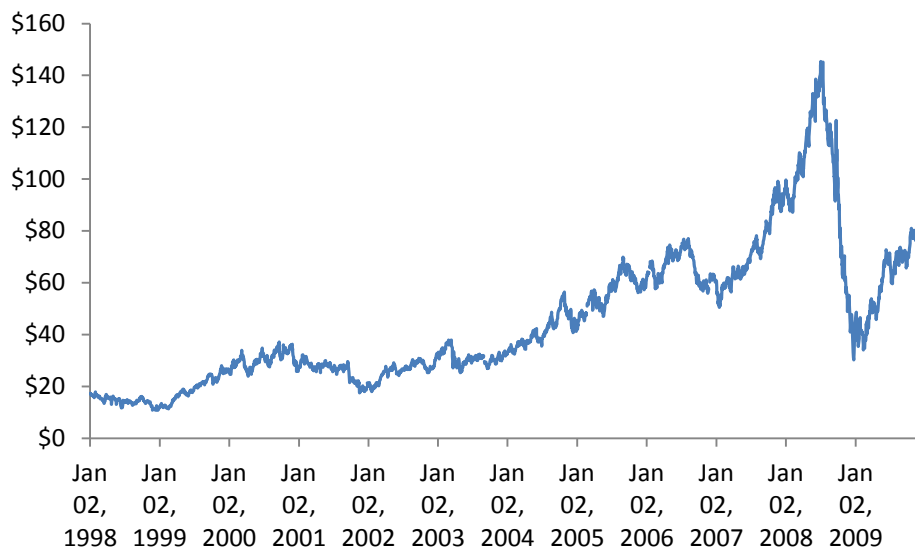
In 1998, Chesapeake acquired 40% stake in Ranger Oil, a Canadian oil producer. In the same year, the Company spent \$105 million for natural gas reserves in Texas from Occidental Petroleum. Through the strategy of aggressive property acquisition, Chesapeake soon tripled its proved reserves. However, this also exposed the Company to greater financial leverage, which



amplified the risk of natural gas price volatility for Chesapeake.

In years after 2000, international natural gas and oil prices accelerated significantly through 2007. Due to both rising prices and technological advancement made by Chesapeake, the Company was able to reap significant profits from its drilling in unconventional reservoirs. In the same period, Chesapeake also expanded its position in the unconventional land market, hoping that its technological advantage would provide an edge in competition with larger and financially more resourceful firms.

WTI Crude Oil Spot Price



Source: US Energy Information Administration

Encouraged by the rising gas and oil prices in the global market, which resulted in great profit for Chesapeake, the Company expanded its acquisition efforts. In 2001, Chesapeake bought Gothic Energy for \$345 million. In 2002, the Company acquired Canaan Energy for \$118 million. In 2003, Chesapeake purchased a 25% stake in Pioneer Drilling, a drilling service provider throughout major onshore fields in the US. In the following year 2004, Chesapeake bought shale gas asset from Hallwood Energy for \$292 million and Concho Resources for \$420 million. In 2005, the Company purchased natural gas assets worth of \$325 million from BRG Petroleum and acquired Columbia Natural Resources for \$2.2 billion. The aggressive



acquisitions have put Chesapeake in debt and on serious financial pressure.

During financial crisis, oil and gas price suffered substantially. Amid falling energy prices, in 2008 the Company recorded \$2.8 billion impairment loss of value from its oil and gas properties. In 2009, as gas and oil price collapses continued, Chesapeake reported a staggering \$11 billion impairment loss. Most recently, the Company in 2012 recorded \$3.3 billion impairment on the value of its wells and reserves. Following the drop of company value from huge impairment losses, Chesapeake's market capitalization fell from \$49 billion in July 2008 to \$17.4 billion as of April 2014.

Amid fury from investors, Chesapeake board of directors replaced Aubrey McClendon with Anadarko Lawler as the company's new CEO. Mr. Lawler is charged with a mission to move the company to a sustainable growth track. During the past 2 years of Mr. Lawler's tenure as CEO, Chesapeake has substantially reduced its capital spending. Acquisition of new reserves slowed down to \$1 billion in 2013, compared to an average of \$5 billion in 3 years previously. In addition, current ratio improved from 46% in 2012 to 65% in 2013.



Financial Analysis

Overview

Chesapeake Energy has experienced mixed financial performance in recent years. The company has seen a considerable increase in revenue over the past years, at an average growth rate of 7%. In particular, this past year saw revenues increase by close to \$5 billion. However, this increase in revenue has been accompanied by a declining gross profit margin as increases in cost of goods sold have outpaced revenue growth. Net income has fluctuated over the past several years in part due to one-time impairments which have driven the company to operate with negative net income. For example, in 2012, Chesapeake recorded a \$3.3 billion impairment of the company's reserve base due to low natural gas prices, which made it uneconomical to keep drilling in a number of their fields. The impairment drove Chesapeake to a \$940 million loss that year which stands in contrast to the net gain of \$1.74 billion in 2011 and a \$474 million gain in 2013. Despite the return to positive net income in 2013, the financial standing of Chesapeake Energy is not without its worries.

Chesapeake Income Statement Key Items

USD in million except EPS	12/31/2013 USD	12/31/2012 USD	12/31/2011 USD	12/31/2010 USD	12/31/2009 USD
Income Statement Key Items					
Net Sales or Revenues	17,377.0	12,316.0	10,870.0	9,366.0	7,702.0
Growth	41.09%	13.30%	16.06%	21.60%	(33.77%)
Cost of Goods Sold	1,895.0	7,081.0	1,475.0	1,101.0	1,058.0
% of Sales	10.91%	57.49%	13.57%	11.76%	13.74%
Gross Profit	12,579.0	2,424.0	7,472.0	6,651.0	5,029.0
Gross Margin	72.39%	19.68%	68.74%	71.01%	65.29%
Selling, General & Admin Expenses	9,918.0	535.0	5,515.0	3,805.0	2,665.0
% of Sales	57.08%	4.34%	50.74%	40.63%	34.60%
EBITDA	4,731.0	2,024.0	4,677.0	4,370.0	(7,446.0)
EBITDA Margin	27.23%	16.43%	43.03%	46.66%	(96.68%)
EBIT	1,828.0	(787.0)	2,754.0	2,756.0	(9,061.0)
EBIT Margin	10.52%	(6.39%)	25.34%	29.43%	(117.64%)
Operating EBIT	2,432.0	1,701.0	1,765.0	2,689.0	2,257.0
Operating EBIT Margin	14.00%	13.81%	16.24%	28.71%	29.30%
Pretax Income	1,668.0	(871.0)	2,724.0	2,657.0	(9,288.0)
Pretax Margin	9.60%	(7.07%)	25.06%	28.37%	(120.59%)
Net Income to Common Shareholders	474.0	(940.0)	1,742.0	1,663.0	(5,853.0)
Net Margin	3.71%	(6.24%)	16.03%	18.94%	(75.69%)
EPS- Continuing Operations	0.7	(1.5)	2.3	2.4	(9.6)



Balance Sheet Concerns

Chesapeake Balance Sheet Key Items

USD in million	12/31/2013	12/31/2012	12/31/2011	12/31/2010	12/31/2009
	USD	USD	USD	USD	USD
Balance Sheet Key Items					
Cash & ST Investments	912.0	456.0	408.0	1,049.0	999.0
Receivables (Net)	2,222.0	2,245.0	2,505.0	1,974.0	1,325.0
Inventories - Total	0.0	0.0	0.0	-	25.0
Current Assets - Total	3,656.0	2,948.0	3,177.0	3,266.0	2,446.0
Property Plant & Equipment - Net	36,404.0	36,533.0	36,760.0	32,378.0	26,710.0
Other Assets	1,241.0	1,400.0	367.0	327.0	294.0
Total Assets	41,782.0	41,611.0	41,835.0	37,179.0	29,914.0
Accounts Payable	1,596.0	1,710.0	3,311.0	2,069.0	957.0
ST Debt & Current Portion of LT Debt	-	463.0	0.0	0.0	0.0
Other Current Liabilities	3,599.0	3,868.0	3,572.0	2,298.0	1,730.0
Current Liabilities - Total	5,515.0	6,266.0	7,082.0	4,490.0	2,688.0
Long Term Debt	12,904.0	12,312.0	10,769.0	12,640.0	12,295.0
Other Liabilities	1,411.0	1,955.0	2,216.0	2,100.0	1,176.0
Total Liabilities	23,642.0	23,715.0	23,874.0	21,915.0	17,573.0
Total Shareholders Equity	15,995.0	15,569.0	16,624.0	15,264.0	11,444.0
Total Liabilities & Shareholders Equity	41,782.0	41,611.0	41,835.0	37,179.0	29,914.0

First off, the company has considerable liquidity concerns. According to the latest financial report, the current ratio for the firm is 0.65 which suggests that if the short-term liabilities all came due, Chesapeake would be unable to pay them using short-term assets. Cash routinely has represented an extremely small percentage of assets for Chesapeake, with it most recently accounting for 2% of total assets and 16% of current liabilities. On the other hand, fixed, longer term assets such as property and equipment for extraction represent 89% of total assets. While the low current ratio represents a potential concern, Chesapeake does have access to a \$4 billion credit line that it has been relying upon for daily cash needs. Chesapeake could make draws from the corporate revolver in dire times to meet its short-term cash needs. Thus, at first look, the poor current ratio would represent a glaring problem but the credit line does have the effect of mitigating liquidity risk of the company to some degree.

In addition to the potential liquidity problems, Chesapeake remains highly leveraged and holds a considerable amount of long-term debt. The past several years Chesapeake has embarked on an



extremely aggressive expansionary policy in terms of acquisitions for exploration and production, spending billions of dollars in acquiring new acreage across America as well as drilling and completing new wells. In fact, as of 2012, Chesapeake had outspent its cash flows in nineteen of the past twenty-one years. While this has led to a considerable increase in assets, up \$12 billion since 2009, the spending has been financed through a combination of asset sales and issuance of long-term notes. As of December 2013, debt to equity stood at 0.99 and the firm holds close to \$13 billion in interest bearing long-term debt. The debt obligations are spread out over the coming years with sizable notes due every year until 2023.

The presence of this substantial long-term debt presents several major problems for the firm. High-level debt will restrict Chesapeake's ability to borrow going forward in order to opportunistically pursue profitable projects. It will also require that the Company uses a sizable amount of cash flows to pay interest every year. On first glance, interest coverage for Chesapeake stands over 7, suggesting the firm can easily pay interest on outstanding debt. However, after taking a closer look, EBITDA generated each year is not even enough to cover capital expenditure. Therefore the Company has to draw on its corporate revolver to make interest payment. Another major concern associated with the firm's long-term debt is that many of its debt contracts have cross default provisions. These arrangements state that if Chesapeake defaults on one of its debt obligations, it will be considered in default for all issuers and may be forced to sell off assets to meet all its debt obligations. Thus, this provision puts Chesapeake in great financial distress if the Company misses one interest payment. Lastly, the substantial debt of the firm increases the risk of default for borrowers and hence will increase the cost of borrowing for Chesapeake going forward.

New Leadership

In response to the concerns over the increasing amounts of debt and the heavy capital expenditure policy, shareholders voted in 2012 to remove co-founder Aubrey McClendon from his Chairman and CEO positions of the Company. A new CEO and board were elected in hopes of steering the company away from the path it had been following. The new CEO Doug Lawler



has promised an end to reckless spending and a focus on improving efficiency and profitability of its core businesses. As part of this new company direction, the firm has been selling considerable amounts of noncore assets as a way to generate cash to be used for paying down its long-term debt. Chesapeake has sold over \$15 billion of assets in the form of oil and natural gas fields and pipelines over the past two years. In addition, the Company recently announced a plan to sell another \$1 billion of assets in 2014. Even by reducing spending, the company still predicts to outspend its generated cash flows by between \$100 and \$300 million this year³. That being said, the company has substantially reduced capital spending moving from an average of \$14.24 billion between 2010 and 2012 to \$7.61 billion in 2013. Thus, Chesapeake has shown its commitment to addressing the major problems associated with its long-term debt and aggressive capital expenditure.

Chesapeake Cash Flow Statement Key Items

USD in million	12/31/2013	12/31/2012	12/31/2011	12/31/2010	12/31/2009
	USD	USD	USD	USD	USD
Cash Flow Statement Key Items					
Net Income / Starting Line	894.0	(594.0)	1,757.0	1,774.0	(5,830.0)
Depreciation, Depletion & Amortization	2,903.0	2,811.0	1,923.0	1,614.0	1,615.0
Deferred Income Taxes & Investment Tax Credit	526.0	(427.0)	1,110.0	1,110.0	(3,487.0)
Net Gains on Sale of Fixed Assets	(302.0)	(267.0)	(437.0)	-	-
Impairment of Natural Gas Properties	-	3,315.0	-	-	11,000.0
Net Cash Flow - Operating Activities	4,614.0	2,837.0	5,903.0	5,117.0	4,356.0
Drilling and completion costs	(5,604.0)	(8,930.0)	(7,467.0)	(5,242.0)	(3,572.0)
Acquisitions of proved and unproved properties	(1,032.0)	(3,161.0)	(4,974.0)	(6,945.0)	(2,268.0)
Proceeds from divestitures of properties	3,467.0	5,884.0	7,651.0	4,292.0	1,926.0
Additions to other property and equipment	(972.0)	(2,651.0)	(2,009.0)	(1,326.0)	(1,683.0)
Net Cash Flow - Investing	(2,967.0)	(4,984.0)	(5,812.0)	(8,503.0)	(5,462.0)
Proceeds from credit facilities borrowings	7,669.0	20,318.0	15,509.0	15,117.0	7,761.0
Payments on credit facilities borrowings	(7,682.0)	(21,750.0)	(17,466.0)	(13,303.0)	(9,758.0)
Proceeds from issuance of debt	2,274.0	6,985.0	1,614.0	17,084.0	9,107.0
Cash paid to purchase debt	(2,141.0)	(4,000.0)	(2,015.0)	(4,538.0)	(1,346.0)
Proceeds from sales of noncontrolling interests	6.0	1,077.0	1,348.0	-	588.0
Net Cash Flow - Financing	(1,097.0)	2,083.0	158.0	3,181.0	(336.0)
Net Increase in Cash	837.0	287.0	351.0	102.0	307.0

A further complication to the effort of reducing spending is that oil and natural gas companies such as Chesapeake require a great deal of capital expenditure simply to replace its reserves. The company continually needs to find and develop new reserves in order to keep up its revenue growth target after the old ones are depleted. Thus, despite their efforts, Chesapeake will still

³ <http://online.wsj.com/news/articles/SB10001424052702304709904579406722824091240>



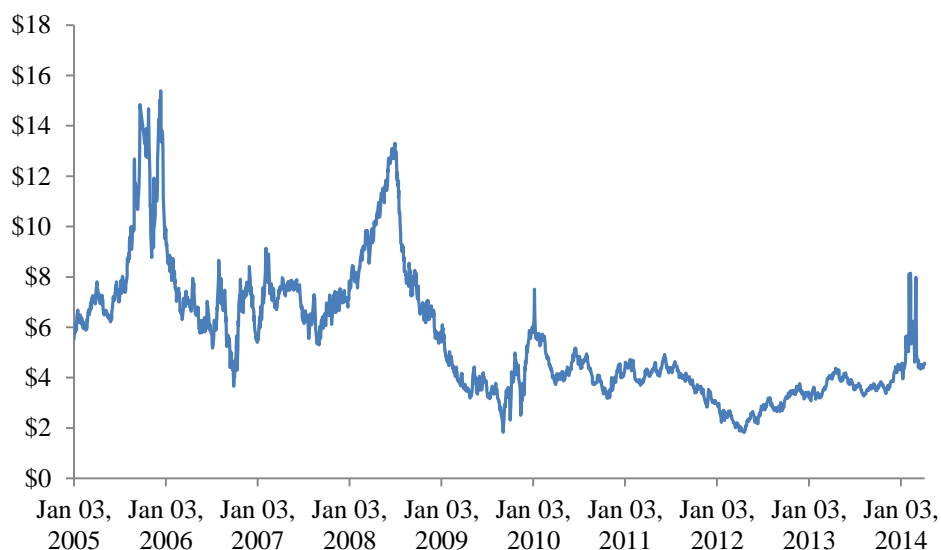
need substantial capital spending devoted towards the acquisition and exploration of new fields. It may need to further increase its debt going forward if internal cash flows are insufficient to cover this necessary spending.

As described above, Chesapeake is committed to improving the health of its balance sheet and pushing the Company to become more efficient as it focuses on its core business of exploration and production of natural gas and liquids. In the past year it has reduced production and general/administration expenses by 15% while at the same time increasing daily average production by 3%. Chesapeake has also reduced long term debt over the past several quarters moving from \$13.45 billion in March 2013 to \$12.92 billion in December 2013. The company appears to be headed in the right direction. Despite a negative net income in the fourth quarter of 2013, analysts predict a return to profitability in the coming year and are focused on the upside of more cost cutting in 2014.

Energy Market Volatility

Despite efforts to improve its cost structure, capital structure, and cash flow management, the financial standing of companies such as Chesapeake remains at risk due to the inherent uncertainty of the natural gas and oil markets. This industry is highly volatile and cyclical as prices and demand for natural gas, liquids, and oil can swing rather substantially. Such volatility introduces a great deal of risk for Chesapeake as price changes can have a major impact on both top and bottom line performances. At the same time, Chesapeake continually faces the threat of an asset write-down due to low market prices. A drop in natural gas and oil price can reduce the value of the firm's reserves, which triggers a noncash fixed asset impairment loss on the Company's bottom line. In response to the inherent volatility of its market, Chesapeake has been very active in commodity hedges. These hedges are important for gas and oil companies so that they can work with fixed prices for their product and thereby stabilize cash flows, ensuring the ability to pay off operating expenses.

Natural Gas Spot Price (NYMEX)



Source: US Energy Information Administration

Historically, Chesapeake's hedging program has performed quite well, earning \$8 billion in hedging alone from 2006 to 2011. However, in 2012, betting on prices to increase, Chesapeake dropped many of its hedges. This bet proved to be a major mistake as prices actually fell and had substantial negative impact on cash flows and profit margins for the firm. Last year, Chesapeake hedged around 50% of its natural gas production and relied heavily upon swaps and three-way collars in order to accomplish this hedge. As of December, Chesapeake had already hedged 12% of its natural gas and 52% of its oil production⁴. Going forward, hedging will be important for Chesapeake as it attempts to align capital spending with cash flow from operations.

Comparative Analysis

Comparing Chesapeake with its major competitors (BP, Conoco Phillips, and Anadarko Petroleum) reveals that Chesapeake tends to underperform financially with respect to its rivals.

⁴ <http://www.trefis.com/stock/chk/articles/176248/drilling-into-chesapeakes-natural-gas-hedging-program/2013-03-27>



Chesapeake's net profit margin, return on equity, and return on assets are all the lowest of the four companies. Furthermore, amongst the four companies, Chesapeake has the only current ratio (0.65) below one and at the same time a considerable higher debt to equity ratio than its major competitors. These two measures suggest that Chesapeake is at the greatest financial risk. Furthermore, the financial troubles experienced by Chesapeake are not shared by other members of the industry. Such comparative financial numbers are rather worrisome for Chesapeake because they suggest that despite higher leverage, Chesapeake still produces inferior returns. However, on the bright side, Chesapeake has displayed considerably stronger revenue growth over the past 36-month period than any of its major competitors, likely due to its aggressive, expansionary policy put forth by the previous management.

The comparative analysis shows that Chesapeake has great room for improvement especially if it scales back its production capacity and focuses on improving margins. Chesapeake should continue selling off noncore assets and work exclusively with unconventional natural gas and liquids reservoirs, where the Company can obtain higher returns.

Stock Performance

Chesapeake's stock has hovered between \$24 and \$28 per share over the past eight months. Currently the stock trades for approximately \$26 a share as of April 11. Chesapeake has a market cap of \$16.90 billion. The Company is trading at 35.77 P/E (higher than the industry median of 28.17), and at a price to book ratio of 1.37 (lower than the industry median of 1.90). Chesapeake's earning expectations and outlook are highly dependent upon natural gas and oil prices. As such, Chesapeake's stock movement often corresponds to changes of energy prices. Due to the high volatility in natural gas prices, Chesapeake's stock can experience considerable fluctuations. In the early months of 2012, Chesapeake's stock dropped significantly in large part due to concerns over the firm's cash crunch which required them to take out a \$4 billion loan to pay off its existing line of credit. In contrast, the stock saw a year of steady growth starting in 2013, likely motivated by the announcement that the then CEO and co-founder Aubrey McClendon would be stepping down. In that year, Chesapeake engaged in a shift in business

strategy away from the highly aggressive spending of McClendon to a more concerted effort of balancing expenditures and cash flows. Analysts are largely neutral regarding Chesapeake's stock with a majority of recommendations to hold. Most analysts are worried about high debt level and inherent volatility in natural gas market. However, they are also encouraged by Chesapeake's dedication towards tempering capital expenditures and focusing on improving operational efficiencies through various cost cutting endeavors.

Chesapeake's Stock Performance in the Past Twelve Months



Conclusion

In looking at the financial situation of Chesapeake in its entirety, there are certainly issues related to the company's sizable long-term debt, decreasing profit margins, and consistently high capital expenditures in substantial excess of cash flows generated from operations. That being said, since Chesapeake appointed a new CEO and board, the company has taken decisive and dedicated steps towards addressing these problems. The firm has committed itself to reining in capital expenditures as it distances itself from the previous practice of aggressive spending. In



conjunction, Chesapeake has made a strong push to sell off noncore assets in an effort to generate cash to start paying down its burdensome long term debt. As part of this plan, the Company also dedicated itself to refocusing on its core exploration and production of natural gas and liquids business. In doing so, Chesapeake expects to significantly reduce operating costs and improve the efficiency of its activities. The combined effect of these efforts is to better balance cash flow with capital expenditure so that the firm can steadily improve its balance sheet strength.



Five Forces Analysis

5 Forces	Rating
Internal Rivalry	High
Barriers to Entry	High
Substitutes and Compliments	Moderate
Supplier Power	Low
Buyer Power	Low

Market Definition

Chesapeake Energy Corporation is classified as independent oil and gas company within the basic materials sector. In 2013, Chesapeake's daily production is consisted of 75% natural gas, 17% oil and 8% natural gas liquids (NGL). Recognizing the high margin of NGLs, in the past year Chesapeake deployed 85% of its acquisition capital to NGL fields, such as propane and butane. Therefore, Chesapeake competes against multinational oil conglomerates—BP, Chevron and ConocoPhillips—-independent companies, such as Anadarko and Devon Energy, and other smaller NGL companies like Tanga Resources and Kinder Morgan Energy Partners. Government price regulation ultimately restricts revenue potential, and the extensive number of companies leads to extensive market fragmentation: the largest domestic natural gas producers only account for 16.5% of total US production in 2010.⁵ Because of the high barriers to entry arising from specialized and expensive infrastructure, this internal rivalry is Chesapeake's biggest challenge.

Internal Rivalry

Because companies in this industry are all price-takers, and their products are homogenous, they have to find other ways to compete. Firms can gain a substantial competitive advantage in one of two ways: discover and control a new deposit, or innovate the production process. Currently, the majority of oil and gas deposits are located in the lower mid-west, and this land is already owned

⁵ <http://marcellusdrilling.com/2011/09/the-10-largest-natural-gas-drillers-in-the-u-s/>



by Chesapeake, BP, Anadarko, and Conoco Phillips. This suggests companies cannot expect to compete on the basis of increasing their share of traditional deposits. They therefore fall back on the second option, and look to innovate by either creating new technology to cut production costs or to invent a method to extract NGLs from alternative sources; hydraulic fracking in shale deposits is an example of the latter.

Barring technical innovation, the revenues in this industry are largely constrained. Therefore, these companies succeed or fail on the basis of costs. Compared to the industry rate of 0.64, Chesapeake's gross margin is below average at 0.37, which implies that they could develop a more competitive cost structure.

Barriers to Entry

Barriers to entry in this industry are extraordinarily high, creating a conducive environment for existing companies (which is why prices are regulated by the government, who wishes to avoid the negative externalities of an oligopoly). Infrastructure is expensive and specialized, suggesting that existing competitors have an additional advantage by retaining knowledgeable and experienced personnel. Moreover, established relationships with distributors can be important to secure long-term contracts.

However, the most restrictive barrier is ultimately access to land. As previously mentioned, the established companies already have control over the known deposits, and are constantly spending their extensive resources to discover new reserves. Entrants need to somehow beat these massive, experienced companies to new deposits, or must invent a technique to extract gas from a new resource.

Substitutes and Complements

Chesapeake and its competitors all produce homogenous products, and therefore any natural gas producer is a direct substitute for any other company. Moreover, the end user is not the same as



the buyer—who is the distributor—and so small variations in quality will not likely impact sales. Sales, then, are reliant on marketing and relationships with distributors.

Renewable energy and electricity can also be considered substitutes, though recently researchers are arguing that these may be becoming complements to natural gas consumption.⁶ Consumers could opt to use one of these forms of energy, which are arguably less destructive for the environment, rather than relying on propane or methane. However, this would have to be done at the user's expense, because the infrastructures for using these different sources are not interchangeable. Therefore, renewable energies are not currently viable threats to the natural gas industry, though they may be in the future, specifically as the possibilities for renewable resources are more thoroughly researched.

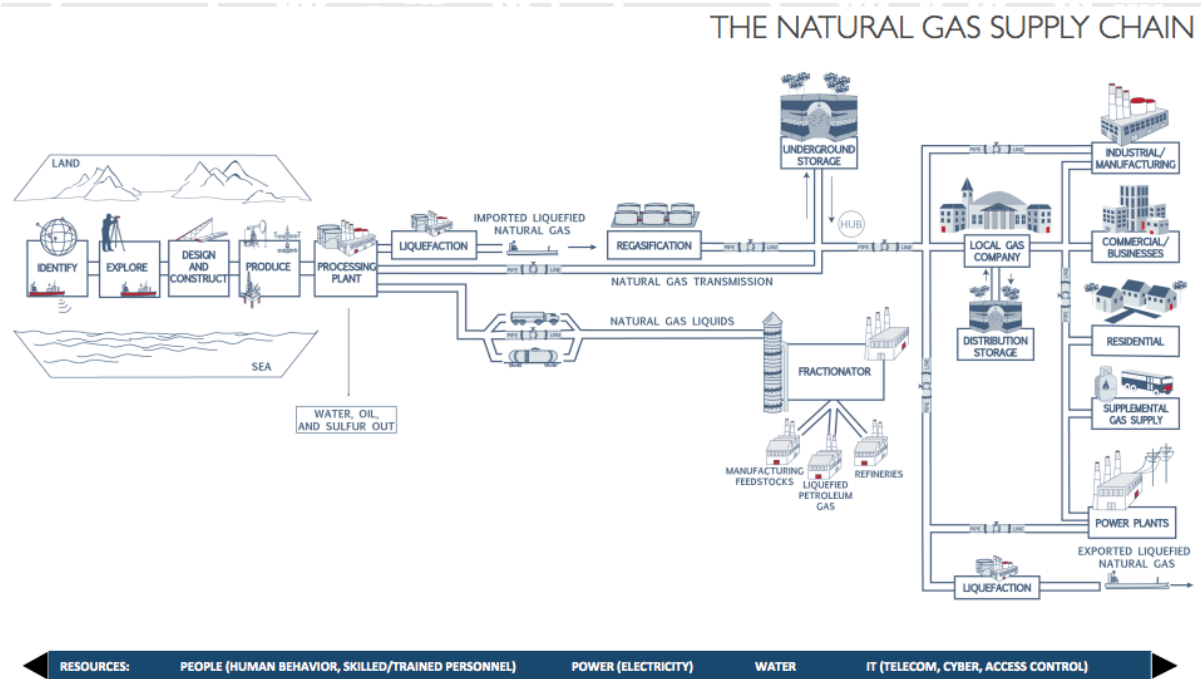
Supplier and Buyer Power

Chesapeake has a vertically integrated business structure, with subsidiaries to cover each step of the supply chain, as shown in the graph below. The company's only supplier is really the earth, which does not tend to bargain for higher prices. There could potentially be a problem with the raw materials Chesapeake's construction subsidiary uses to build the extraction sites, but historically these suppliers do not have substantial bargaining power.

Likewise, this industry is regulated and so prices are pre-determined by the market. Buyers, therefore, cannot try to reduce prices because profit margins are already artificially small.

⁶ <http://theenergycollective.com/ed-dodge/308406/renewables-and-natural-gas-are-partners-not-opponents>

Natural Gas Supply Chain



Source: American Petroleum Institute

Chesapeake's Subsidiaries

Subsidiary Name	Service Provided
Chesapeake Energy Marketing, Inc.	Marketing services
Chesapeake Oilfield Services, Inc.	Oilfield services and equipment
Compass Manufacturing, LLC	Gas compressor package and production equipment
Hodges Trucking Company, LLC	Field and heavy haul transportation
MidCon Compression, LLC	Natural gas compressor for daily field production
Nomac Drilling, LLC	Drilling rigs and additional drilling services
Oilfield Trucking Solutions	Oilfield fluid transportation

SWOT Analysis

Strength	Weakness
<ul style="list-style-type: none"> ● Proprietary drilling technologies ● Growing production capabilities ● Large total reserves ● Specialization in unconventional drilling techniques ● Vertically integrated 	<ul style="list-style-type: none"> ● High debt level ● Concentration on natural gas ● Risky leveraged acquisition model ● Environmental and safety liabilities
Opportunities	Threats
<ul style="list-style-type: none"> ● Forming joint ventures ● Developing technologies to increase use of natural gas ● Taking advantage of the record high market to de-lever balance sheet 	<ul style="list-style-type: none"> ● Commodity market volatility ● Change of governing legislation ● Change of public opinion ● Development of alternative energy technologies

Strength

Proprietary Drilling Technologies

During 15 years of gas and oil property exploration, Chesapeake developed a portfolio of proprietary technologies that give the company higher efficiency and safety standard in the drilling process. First, Chesapeake acquired the nation's largest inventory of three-dimensional (3-D) seismic information. The 3-D seismic data enables the Company to locate reservoirs of natural gas that might otherwise remain undiscovered. It also allows the Company to drill the horizontal wells more accurately inside the targeted shale formation. In addition, Chesapeake has developed an information-gathering program that gives insight into new plays and competitor



activity. This program enables the Company to quickly analyze information and react to opportunities that are created through the drilling program. Furthermore, Chesapeake has established a unique Reservoir Technology Center (RTC) in Oklahoma City. The RTC enables the Company to more quickly, accurately and confidentially analyze data from shale wells on a proprietary basis and then identify new plays and leasing opportunities ahead of competition to improve existing plays.

Growing Production Capabilities

Chesapeake's overall daily production for 2013 grew 3% over 2012, with an average of 670 million barrel of oil equivalents (mboe), consisting of 75% natural gas, 17% oil and 8% NGL. The natural gas production decreased 3% per day; oil production increased 32%; and NGL production increased 19%. Continued production and exploration will drive revenue and profits in the next few years, as global economy continues to revive. Besides, Chesapeake keeps its production focus on US onshore properties. This way the international political and military conflicts will have only minimal impact on Chesapeake's production capabilities.

Large Total Reserves

The Company's estimated proved reserves as of December 2013 were 2.678 billion barrel of oil equivalents (bboe), a 2% increase from 2012 year end. Being the second largest natural gas producer and tenth largest oil and natural gas liquids producer allows Chesapeake to time plan their drilling activities more opportunistically and ultimately yield a larger profit.

Specialization in Unconventional Drilling Techniques

Vast quantities of natural gas, natural gas liquids and oil deposits exist in deep shale and other unconventional formations. Chesapeake over the years has developed expertise including hydraulic fracturing and horizontal drilling, to allow them to access deposits that would otherwise be unprofitable. Specializing in the unconventional fields allows Chesapeake to compete with larger companies with a cost advantage. It also keeps the Company from bidding wars with financially resourceful competitors in the traditional natural gas fields.



Vertically Integrated

Chesapeake is fully vertically integrated. The Company is able to service itself and other third-party clients from exploration, drilling, to fleet and pipeline transportation, and eventually to marketing and selling to intermediaries and end market customers. This model minimizes Chesapeake's cost volatility and allows for efficient forward planning. In addition, it enables the Company to take advantage of rising market conditions by providing oilfield and marketing services to third party clients.

Weakness

High Debt Level

By year end 2013, Chesapeake had current liabilities of \$5.5 billion and current assets of only \$3.6 billion. The Company had cash \$837 totaling million and a current ratio 0.65, which means that without further assistance, Chesapeake would be insolvent if all of the liabilities in the current period become due at the same time. In terms of long-term debt, Chesapeake had over \$12.8 billion senior notes, almost all of which have cross-default provisions. This means that if Chesapeake is unable to make its interest payment to one of the existing notes issuers, almost all issuers will regard it as a default on their own debt and have the right to liquidate company assets to ensure payments. Besides, a high level of debt will make refinancing its existing debt difficult, particularly in light of unstable cash flows due to the volatile nature of energy prices. Furthermore, high levels of debt will make it expensive for Chesapeake to take on new acquisitions through leverage. With the Company's current business model, acquiring the right properties at the right time is critical to future performance, and the inability to do so will put the Company into negative growth.

Concentration on Natural Gas

Currently natural gas production consists of nearly 75% of Chesapeake's daily production volume. According to US Energy Information Administration, natural gas consumption is projected to rise in 2014 due to growing usage from residential, industrial and commercial



sectors. However, as supply is projected to quickly catch up from the increasing plays in shale and hydraulic fracturing, the direction of natural gas price in the near future is still uncertain. Concentrating on natural gas may expose Chesapeake to risks that could otherwise be offset through diversification.

Risky Leveraged Acquisition Model

Chesapeake historically has relied heavily on leveraged acquisitions to grow its revenue. However, due to the volatile nature of the energy prices, such aggressive moves have made Chesapeake subject to oil and natural gas price volatility more than its competitors in the industry. Besides, there are significant capital expenditure and failure risks associated with exploring, developing and processing natural gas and oil properties. Using leverage in the acquisition process amplifies risks in a whole chain of risky activities.

Environmental and Safety Liabilities

Chesapeake's operations are subject to stringent and complex federal, state and local laws protecting human health and safety, the environment and natural resources. Certain environmental laws impose strict liability for costs required to clean up and restore sites where hazardous substances have been disposed. Besides, it is often observed that neighboring landowners will file claims for injury or property damage allegedly caused by the Company's operations. Most recently, Chesapeake was fined \$3.2 million for violating the Clean Water Act in West Virginia⁷, which prohibits the filling or damming of wetlands, rivers, streams and other US waters without a federal permit.

Opportunities

Forming Joint Ventures

Chesapeake can benefit substantially from forming joint ventures with other international players in energy resource market. As discussed before, Chesapeake is focused on US onshore fields. It has accumulated expertise and proprietary technologies in developing unconventional natural gas

⁷ <http://www.reuters.com/article/2013/12/19/us-chesapeake-penalty-idUSBRE9BI19Z20131219>



and oil properties at low cost. However, Chesapeake is not in the best financial position to pursue as many opportunities as it would like. Partnering with a bigger and more financially resourceful company can help Chesapeake with financial constraints, de-lever and de-risk its production process. Chesapeake provides field expertise and technologies and the partnering firm contributes capital and other standardized oilfield services. This model provides a win-win strategy that combines the comparative advantages of both companies. Most recently, Chesapeake announced a joint venture in Mississippi Lime with Sinopec, the largest oil refinery company in Asia.

Developing Technologies to Increase Use of Natural Gas

Given the heavy concentration on natural gas production, Chesapeake should develop technologies that would increase the natural gas' usage in major industries. Natural gas can serve as a supplement for oil in many ways but is mainly constrained by pipe transportation. Developing easier and cheaper transportation methods for natural gas can be extremely beneficial for Chesapeake in the long term.

Taking Advantage of the Record High Market to De-lever Balance Sheet

The current financial market is a great opportunity for Chesapeake to refinance its debt with lower interest rate, sell assets with potentially high multiples to affluent corporate buyers, and spin-off noncore businesses to collect some cash from the public market.

Threats

Oil, Natural Gas and Capital Market Volatility

As a price taker, Chesapeake faces significant risks in the uncertainty of prices in public markets. A price collapse could impose serious negative impact on the firm's bottom line. Chesapeake's enterprise value is tied to the estimated value of the underlying natural gas and oil in each of the Company's properties. The value of these assets can vary due to either a change in energy price or a change in expected exploitable production underground. In 2009, Chesapeake recorded an asset value write-down of more than \$11 billion, which was 5 times the earnings from operations



that year.

Change of Governing Legislation

Chesapeake's operation is highly regulated by federal, state and local laws regarding human safety and environmental protection. If the legislators decided to put forth stricter laws that would prohibit Chesapeake's certain drilling process, the Company's production capabilities would suffer. In recent years, Pittsburgh, New Jersey, Vermont among others, banned hydraulic fracturing in their respective regions due to concerns of water contamination brought by the special techniques used in this drilling process. Many other cities and counties in the US have also passed legislation that suspended the practice of hydraulic fracturing.

Change of Public Opinion

As environmentalism becomes a popular concept, the images of the natural gas and oil companies have worsened. People's negative opinion about the fossil fuel industry can create problems over the long-term prospect of Chesapeake. In particular, negative public opinion may push Congress to pass unfriendly bills against Chesapeake and its peers. The nationwide pressure of "divestment from fossil fuel investment" in higher education institutions has yet to become a real impact for fossil fuel companies. However, the symbolic impact is significant. Student movements from Harvard University, Brown University, and the Claremont Colleges, for example, have increased social awareness about fossil fuel and its connection with pollution. Most recently, Pitzer College decided to divest its \$125 million endowment of financial holdings in fossil fuel companies by the end of 2014⁸, the largest endowment thus far to commit to fossil fuel divestment.

Development of Alternative Energy Sources

The ultimate threat to Chesapeake is breakthrough technologies in the development of alternative energies, i.e. biofuel, solar technology, etc. Chesapeake should make an effort to appeal to and invest in startups that develop alternative and potentially revolutionary energy technologies, as a way to diversify away from fossil fuel.

⁸ <http://www.bloomberg.com/news/2014-04-12/pitzer-college-to-divest-investments-in-fossil-fuel-stocks.html>



Strategic Recommendations

Improve Balance Sheet

The number one priority for Chesapeake is to improve its balance sheet. Natural gas and oil development is a capital intensive activity. In order to maximize shareholder value, Chesapeake needs to be able to deploy capital opportunistically to capture and absorb market movements. Chesapeake's current balance sheet cannot support the financing the Company would need if opportunity comes. The debt/EBITDA ratio is 2.7, current ratio 0.65, debt/equity 0.99, (EBITDA – CapEx)/interest payment -1.9. Chesapeake is highly levered across all metrics. Chesapeake cannot make its interest payment from operating cash flows after CapEx is deducted, which puts the Company into a very dangerous position. The cross-default provisions in Chesapeake's senior notes allow debt issuers to liquidate company assets if Chesapeake fails to make interest payment to any one of the outstanding senior notes.

The current record high bond market and stock market present rare opportunities for Chesapeake to reorganize its capital structure. First of all, Chesapeake can take advantage of the tight spreads in the junk bond market and refinance its existing debt for lower interest rate. Due to the massive asset purchasing plan from Federal Reserve in the past several years, bond yields are at a historic low. Barclays Capital High Yield Index's yield-to-worst was at 5.23% as of April 11, 2014, only 389 bps higher than that of US Treasury at 1.34%. Secondly, Chesapeake should sell off noncore operations either to other corporate buyers or to the public markets via an IPO. Thanks again to the quantitative easing and promise of low interest rate from the Fed, the equities market in the US has achieved a record high, more even than pre-crisis levels. Therefore Chesapeake should take advantage of the high multiple environment in the equities market and sell off noncore operations. Thirdly, Chesapeake should sell selected nonstrategic natural gas and oil fields to other companies and focus only on unconventional reservoirs, where the Company has developed a technological expertise. This move takes advantage of the current high energy prices to pay off Chesapeake's existing debt. It also allows the Company to focus exclusively in areas



where it has comparative advantage.

Form Joint Ventures – the Capital-light Strategy

Chesapeake has entered into several joint ventures with multinational petroleum companies. In these arrangements, Chesapeake usually sells a share of its interest in a leasehold in exchange for cash. The Company continues to serve as the operator in these fields and receives revenues from the drilling process. In order to strengthen Chesapeake's balance sheet, the Company needs to also increase cash flows and reduce capital expenditures. The best way to achieve this goal without severely impacting the Company's bottom line is through more joint ventures with larger partners. Chesapeake can leverage the expertise it has developed with unconventional reservoirs to serve as field operators in exchange for capital contribution from its joint partners. This transforms the capital-intensive strategy of property acquisition to a relatively capital-light field technology servicing strategy. Leveraging on the Company's technology, rather than assets, reduces Chesapeake's financial risks and increases margin on the revenue it brings in. Even though total top-line growth may slow down or even decrease, the combination of higher margin and healthier balance sheet will prove the change of strategy to be worthwhile.

Focus on Core Business

As briefly touched on in previous pieces of recommendation, Chesapeake should focus its production efforts exclusively in developing unconventional shale gas, oil and liquids properties. The Company's comparative advantage is its technology and expertise accumulated from dealing with unconventional fields. It is essential for Chesapeake to find the right position in this competitive and heavily regulated industry. Chesapeake cannot compete directly with the likes of BP and Chevrons in buying up reservoirs, but it can specialize in one aspect and excel at it. By focusing on developing the best technology in dealing with unconventional fields, Chesapeake will easily find partners that will contribute capital to purchase and develop properties. This piece of recommendation works well with joint venture strategy.



Lobby Government and Legislators

One of the biggest risks facing Chesapeake is legislation, both in terms of scope of operations and energy policies. Chesapeake needs to demonstrate to legislators that hydraulic fracturing is not toxic to local environment and does not contaminate underground water, two of the biggest concerns that motivate local law makers to ban fracking. In addition, Chesapeake needs to join its competitors to lobby government into promoting natural gas over its substitutes.

First of all, natural gas is environmentally friendly. Among carbon fuel sources, natural gas has the lowest output of greenhouse gases that contribute to global warming⁹. To get 1 million Btu, natural gas production generates 117 pounds of carbon dioxide, whereas oil generates 164 pounds and coal 208. Using natural gas in place of oil for automobiles and coal for power will dramatically reduce greenhouse gas output in the US. Chesapeake and its peers should lobby the government into subsidizing natural gas vehicles and natural gas electricity generation plants. In fact, natural gas vehicles have become a popular choice among automobile buyers in China. Chinese government subsidies made these specially modeled cars affordable and even attractive to normal families, which in turn has increased consumption of natural gas.

In addition, probably more importantly, natural gas can help America become energy self-sufficient. Currently the US imports half of the oil it consumes, mostly from Canada, Saudi Arabia, Mexico, Venezuela, and Russia. Several of these countries can become unstable or political unfriendly with US. Thanks to the key technology breakthrough with shale gas development, natural gas production reached record high, according to Energy Information Administration. BP forecasts that by 2027, natural gas will replace oil as the leading fuel in the US energy consumption. With fracking technology and shale gas reserves, US will be able to become energy self-sufficient by 2035. By promoting natural gas now, the US will have the infrastructure necessary to replace oil with natural gas when natural gas production capacity catches up in the future. This energy security provided by Chesapeake should be well received in Congress.

⁹ <http://naturalgas.org/environment/naturalgas/>



Invest in New Energy

One of the threats discussed earlier that could challenge Chesapeake is major technology breakthrough in alternative energies such as biofuel or solar technology. Chesapeake has traditionally focused on oil, natural gas and natural gas liquids. New energy research is not its expertise and therefore it should not engage in such activities. However, in order to hedge the risk of disrupting technologies, Chesapeake should set up a venture capital team that constantly looks for the most promising new energy startups and invests in them early.