

Sector IQ | Energy

Powered by McGraw Hill Financial
Issue 4 | April 2015

Crude Awakening. Where will it all go?



McGRAW HILL
FINANCIAL
Essential Intelligence

Where Will It All Go?

Although prices have stopped sliding precipitously since January, we are just now beginning to see many of the effects in the new world of lower priced oil. Traders, investors, and oil companies alike have taken advantage of contango* in the futures market or have acted on a belief that prices will rise in the near term and have thus chosen to store crude, resulting in an unprecedented growth in the stock of stored oil within just a few months. Some estimates now have stocks as high as 92% of overall current storage capacity.

So, where will it all go? In this issue of Sector IQ: Energy, we explore this question broadly. We analyze scenarios for how much more capacity tanks have. We evaluate the effects on companies that may already feel the financial pain of these fallen prices and look at those who might stumble next. Additionally, we explore how equity analysts' opinions and recommendations have evolved and what investment strategies have been effective since oil started sliding.

INSIDE THIS ISSUE

- 2 AS ENERGY PRICES GO DOWN, ENERGY PRODUCTION GOES UP**
- 3 COMMODITIES | Oil Storage**
- 4 EQUITIES | Quantamental Insights**
- 5 EQUITIES | Research**
- 6 EQUITIES | Analyst Estimates**
- 7 FIXED INCOME | Market Trends**
- 8 CREDIT | Market Perspectives**
- 9 CREDIT ENVIRONMENT | S&P Ratings**
- 10 DEALS | M&A Activities**
- 11 EXTERNAL PERSPECTIVE**

PREVIOUS ISSUES

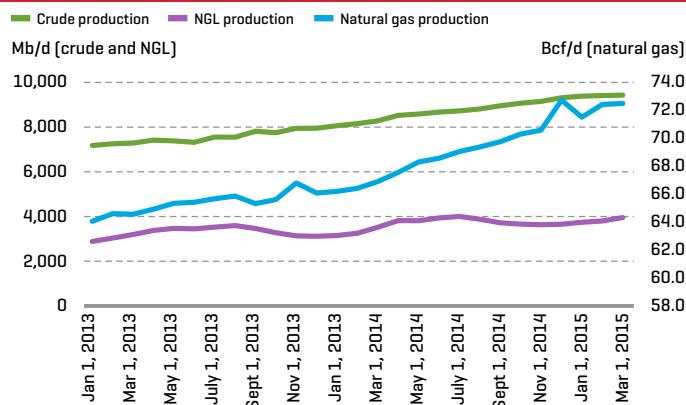
- Issue 1: Sector IQ: Energy
- Issue 2: Energy Renaissance
- Issue 3: Waiting For The Spring...

As Energy Prices Go Down, Energy Production Goes Up

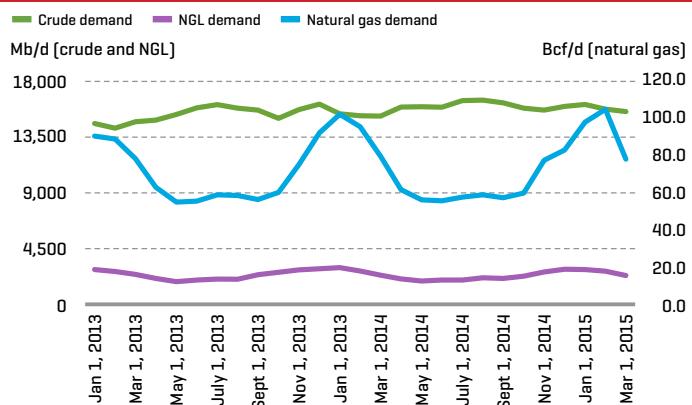
U.S. energy production growth showed no signs of slowing down during the first quarter despite a 50% drop in West Texas Intermediate (WTI) crude oil prices and a 40% drop in the active U.S. rig count in March 2015 from the March 2014 average. U.S. crude oil production was still up about 1.3 million barrels per day (b/d; 16%) during the first quarter from the first-quarter 2014 average. Production of the other energy commodities, except coal, also remains quite high with U.S. natural gas liquid (NGL) production in the first quarter up 548 million b/d, or 18%, from first-quarter 2014 and U.S. natural gas production up 5.9 billion cubic feet per day, or 9%, quarter-over-quarter. However, the declining rig count will likely lead to slower growth, particularly with oil production, through the remainder of 2015.

Meanwhile, U.S. energy demand growth, though fairly strong, remains too small to keep pace with production. A second consecutive cold winter and weaker U.S. natural gas prices pushed U.S. gas demand up about 1% from the polar vortex winter in first-quarter 2014. All of this year's demand gains to date have occurred in the power sector as gas has taken a large share of the power market from coal. Crude oil refining demand ended the quarter up 542 million b/d, or 4% in fourth-quarter 2014, but that was well short of production growth during the quarter. This led to a record ramp-up in storage levels. With limited demand growth and federal export restrictions, storage levels will likely remain elevated; crude prices and the rig count will likely stay under downward pressure.

U.S. Energy Production



U.S. Energy Demand



Sources: Bentek, Energy Information Administration. Data as of March 31, 2015. Past performance is not indicative of future results. Bentek Energy Natural Gas, Crude, and Natural Gas Liquids Products

Sources: Bentek, Energy Information Administration. Data as of March 31, 2015. Past performance is not indicative of future results. Bentek Energy Natural Gas, Crude, and Natural Gas Liquids Products

* Contango is a situation in which forward prices exceed spot prices

COMMODITIES | Oil Storage

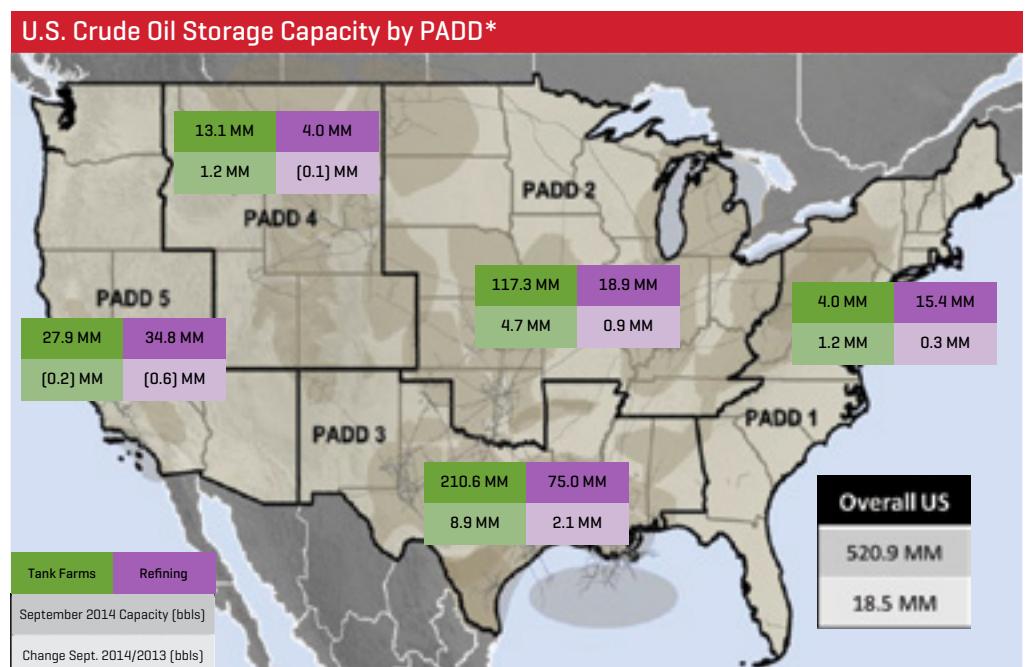
U.S. Storage Keeps on Growing

With stocks (oil storage) building rapidly in the U.S., the question continues to arise: "Just how full is storage at both refineries and tank farms?"

U.S. stocks have grown at unprecedented rates since 2015 began. Although stocks normally build during the beginning of the year because refineries perform maintenance before the high-demand season for products in the summer kicks in, the typical build during the past five years has been 2.2 million barrels/week (b/w). In contrast, stocks have built by 7.1 million b/w to date in 2015. This implies current oversupply in the market of more than 700,000 b/d. Rampant oversupply, as well as the surge in stored volumes that followed, caused stocks (excluding the SPR [Strategic Petroleum Reserve]) to reach over 400 MMbbls by late January 2015. Prior to the current surge, stocks had not topped the 400 MMbbl market since April 1931.

The U.S. Energy Information Administration (EIA) reported stocks at 489.0 million barrels the week that ended April 17. These stocks are not only being held at refineries or at tank farms but are also being held at the lease, on pipelines, or on vessels in transit from Alaska. For this reason, comparing the reported stock level to the 521 million barrels of working storage capacity in tanks or caverns that the EIA listed in September 2014 does not equate to how full overall storage actually is in the U.S.

After accounting for the amount of crude being stored at the lease, flowing through pipelines, or being transported from Alaska, we must examine the amount of working storage in tanks or caverns that is actually available. Although tankage has been added since September 2014, Bentek will use the 521 million barrels figure the EIA most recently published as the base for total working capacity. When determining how much capacity can actually be utilized, we should consider that refineries need to retain tank flexibility to receive either large cargos or shipments of specific grades to round out their feed slate. This would limit the extent that refiners are willing to fill up



Source: EIA, Bentek. Data as of September 30, 2014. * PADD - Petroleum Administration for Defense Districts

Oil Storage Utilization Projections

Reserved for blending or segregation	5%	10%	15%
Utilization (refineries & tank farms)	78%	81%	85%

Source: Bentek. Data as of April 17, 2015.

their tanks, which would keep average utilization at refineries during the month well below 100%. Tanks set aside for specific uses, such as blending or segregation, also affect both refineries and tank farms. Segregation occurs when the tank owner wants to keep a higher value crude separated from other grades with a lower value. For this reason, the amount a tank, or set of tanks, is utilized depends on how much of that specific grade has been received while other grades will be turned away.

Accounting for these factors, Bentek has built scenarios for the utilization level at tank farms and refineries based on whether 5%, 10%, or 15% of tank space has been set aside for either blending or segregation purposes. Bentek anticipates the amount of capacity being utilized at either refineries or tank farms was between 78%-85% as of April 17 based on the EIA's weekly storage estimate (see chart above).

For analysis and insight on oil markets similar to that seen here, please contact Bentek [here](#).

EQUITIES | Quantamental Insights

Does the Present Resemble the Past?

In the third edition of Sector IQ: Energy published February, 2015, we reviewed investment strategies that had historically worked well in the energy sector when oil prices were falling. Since then, our readers have asked how well these strategies have worked in the current energy environment as oil prices have continued falling. In other words, how well do the strategies identified in our February 2015 report "fit" the current energy environment, and are there other strategies that we did not highlight in our previous report that are effective in the current environment? Our findings are based on two regimes--a "past decline regime," which consists of all months with a decline in WTI price of 5% or more prior to June 2014, and a "current decline regime," which comprises all months with WTI price declines of 5% or more between July 2014 and February 2015.

The first four strategies in the chart at the right are the same metrics we published in the February 2015 edition of Sector IQ: Energy. All four strategies delivered top-quartile excess returns in both regimes with the top-quartile excess returns in the current decline regime stronger for three of the four strategies (purple bars). The stronger performance in the current regime may be reflective of the extreme movement in oil prices that dominate the current regime--monthly oil price declines of 10% or greater. When oil markets fall this sharply, investors flock to safety: to oil and gas companies with relatively low capital expenditure (CAPEX) requirements, high free cash flows, and low debt levels.

The last two strategies in the chart (free cash flow/enterprise value and size) were not highlighted in our last report, but both emphasize

Back-Tested Long-Only Top Quartile Excess Return

Excess return: S&P Global BMI [Apr 2000-Feb 2015]

█ Past Decline Regime █ Current Decline Regime

Monthly excess return [%]

6

4

2

0

CAPEX/
sales Free cash
flow/sales EBIT/interest
expense Operating cash
flow less
dividends/CAPEX Free cash
flow/EV Size

Source: S&P Capital IQ. Data as of March 31, 2015.

the same characteristics that investors value when oil markets are stressed. Free cash flow/enterprise value considers the availability of cash to meet both CAPEX and dividend obligations. Size, which selects large-cap stocks over small-caps, has a long-only excess return of 5.71% and is the best strategy (in the current regime) out of all six. The strong performance of a large-cap strategy suggests that investors were concerned about the "bankruptcy risk" associated with small-cap energy names as oil prices plunged. Our previous research suggests that the most effective strategy in falling energy markets is one that combines some of the six strategies highlighted in this report. Investors anticipating a further fall in oil prices may want to consider adopting a similar multistrategy approach.

Backtested returns do not represent the results of actual trading and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Inclusion of fees would lower performance. Past performance is not indicative of future returns.

Global Energy Stock Performance First-Quarter 2015



Source: S&P Capital IQ. Data as of March 31, 2015. Performance relative to the country's broad market index (BMI).

Energy Stocks are Still Underperforming Globally

For most countries we track on the Alpha Factor Library, the energy sector's performance continued to lag their respective markets as the weakness in oil prices extended into 2015. In the heat map, there are a few bright spots, including Russia where the energy sector is up by 2% over the S&P Russia Broad Market Index (BMI) year-to-date. However, the energy sector's relative return in all other major producers was mostly negative with Indonesia (-14%), U.K. (-6%), U.S. (-4%), and Canada (-4%) lagging the most.

EQUITIES | Research

Upstream Capital Spending Begins Decline

Capital spending by upstream players is now in the early stages of a major pullback after years of steady increases. Collectively, the upstream names in S&P Capital IQ's STARS coverage universe are anticipated to spend about 30% less in 2015 for capital projects based on S&P Capital IQ consensus estimates as of late March 2015. Looking ahead to 2016, total CAPEX for this group of companies is expected to rise a modest 3%. In 2010, the group was weighted toward natural gas. Today, as U.S. E&P (Exploration & Production) activities have begun to focus on unconventional oil and natural gas liquids (NGLs), the proportion of liquids production is on the rise and expected to hit 56% of total production by 2016, up four percentage points from 52% in 2014.

S&P Capital IQ's fundamental outlook for energy equipment & services equities is negative due to the sudden and dramatic decline in crude oil prices, which began in late 2014.

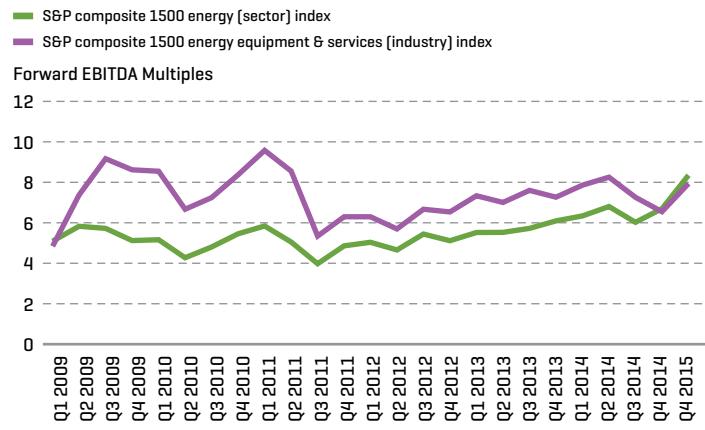
S&P Capital IQ equity analysts expect the oil and gas industry to experience a significant decline in revenues in 2015 and focus its efforts on cost reduction and efficiency improvements. For 2016, we think the industry should stabilize but do not expect any kind of meaningful recovery. Following efficiency efforts made in 2013 and 2014, we do not anticipate that there is considerable room for further cuts (in other words, not much low-hanging fruit), and as a result, we see margins being adversely affected in 2015 before recovering slightly in 2016. Earnings will be weaker in 2015 and show little improvement in 2016.

The revenue stream for energy equipment & services companies depends on the willingness of its upstream customers to continue spending on oil and gas projects. That willingness, in our view, is likely to be lower everywhere in 2015 (relative to past years) but relatively better outside of North America. In international projects, long project timelines should lead customers, in many cases, to look past short-term weakness on the basis that long-term economics remain intact. Within North America, however, we see greater likelihood of spending cuts, which should weigh on rig counts and, ultimately, in production, if the cuts are sufficiently long-lasting.

Overall, the industry's balance sheets are in reasonable shape, with recent efforts to improve the balance sheet putting many companies in a position to weather the downturn.

We expect further industry consolidation to continue. Although valuations have decreased for individual company share prices,

Forward EBITDA Multiples, Energy Equipment & Services vs. Energy Sector



Source: S&P Capital IQ. Data as of March 31, 2015.

forward estimates have decreased even further, yielding relative valuations that are in line with historical averages or slightly expensive.

From a valuation perspective, both the energy equipment & services industry and the broader energy sector are experiencing higher valuation levels based on forward enterprise value to EBITDA (EV / EBITDA) ratios. In the case of the energy equipment & services industry, first-quarter 2015 forward EV/EBITDA valuation was about 8% above the average since 2009, which we think suggests that stock prices have retreated by relatively less than EBITDA estimates have declined. Meanwhile, in the case of the broader energy sector, first-quarter 2015 forward EV/EBITDA valuation was about 48% above the average since 2009, which we think points to EBITDA estimates being slashed by a far greater degree than stock prices.

In general, S&P Capital IQ thinks the market is essentially indicating that this year is likely to be a bit of an anomaly in upstream earnings power and is thus looking past 2015. We think that if 2016 upstream earnings were being used in lieu of 2015 earnings, forward multiples would not look quite so expensive.

This is an excerpt from the S&P Capital IQ "Energy Equipment & Services" Industry Survey. For more information about S&P Capital IQ Industry Surveys or S&P Capital IQ equity research, please contact wealth@spcapitaiq.com.

View a complimentary copy of the complete April 2015 "Energy Equipment & Services" Industry Survey report.

EQUITIES | Analyst Estimates

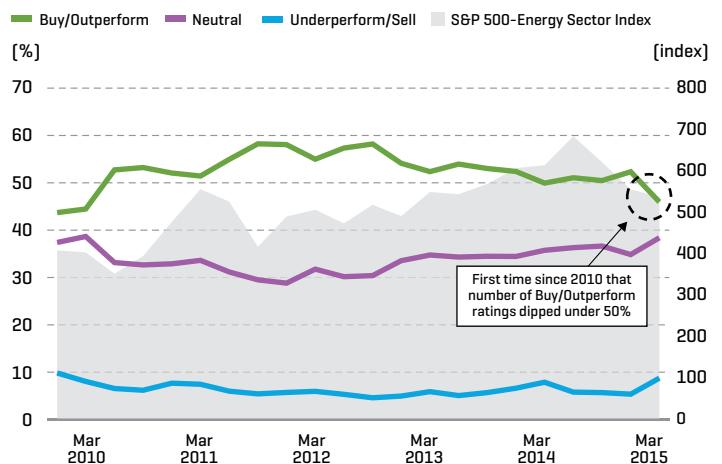
Do Wall Street Analysts Have the Right Call?

Wall Street sell-side analysts always seem optimistic, particularly when an earnings period begins. As of Jan. 1, 2015, S&P Capital IQ's CY (calendar year) 2015 bottom-up earnings per share estimate aggregate had the S&P 500 Index growing 7.69%. Since then, analysts have ratcheted down forecasts because of numerous marketplace factors, such as the price of oil, a stronger dollar, and more. As of April 1, 2015, the expected growth rate is +0.77%, which demonstrates the largest January-April percentage drop in expectations since 2009. Although all but one sector showed a downward trend, energy easily had the sharpest decline, shedding more than 34% since January.

Also, remarkably analysts have finally adjusted their investor rating recommendations for the energy sector reflecting the sharp energy decline. Roughly 49% of all ratings currently contain a Buy or Outperform recommendation. Although that may seem high, this is the first time since March 2010 that the percentage of Buy/Outperform recommendations has dipped below 50%. When this occurred in March 2010, the energy sector index price declined by 12.9% in the following three months but rebounded by 37.9% year-over-year. Most analysts define their recommendation as a six to 12-month horizon.

Conversely, about 9% of all ratings recommendations currently contain a Sell or Underperform designation. However, as the energy sector is already down more than 21% since July 2014, some may question if analysts may be too late with their recommendation and possibly already missed the bearish call. Time will tell if we will see a quick reversal in these ratings or if they will remain for the coming months.

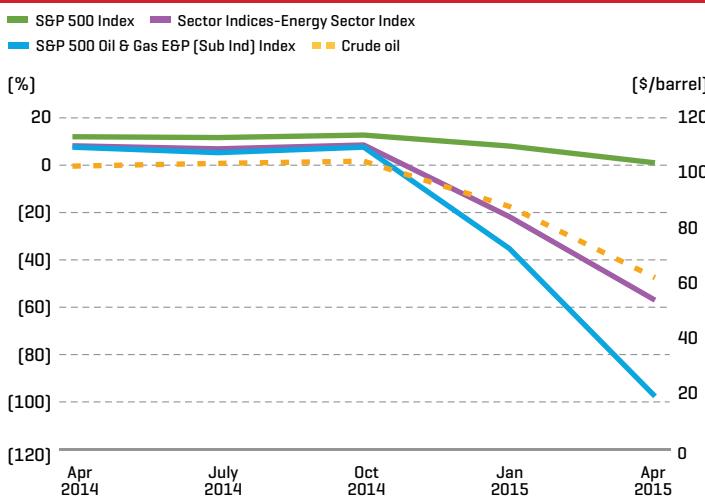
Recommendations Trends for S&P 500 Energy Sector Index



Source: S&P Capital IQ. Data as of Mar. 31, 2015.

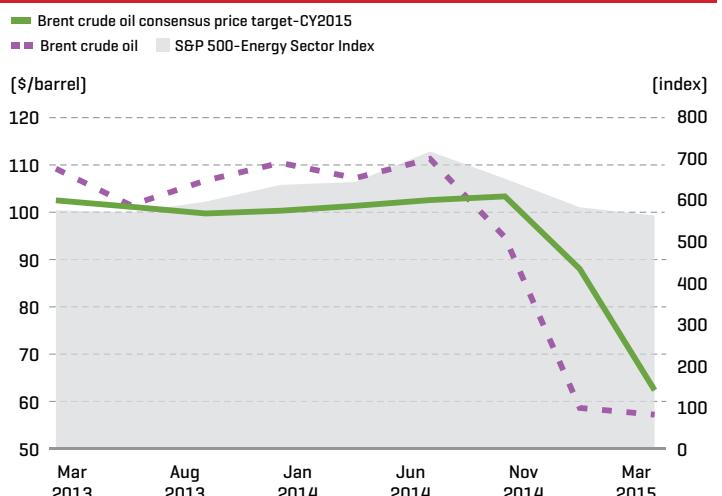
Oil's volatile price continues to shape analysts' opinions on company profits. According to Brent crude oil price targets, analysts clearly don't yet believe oil prices will rise by the end of the year. Moreover, average daily production estimates for oil have dwindled over time. When looking at the top ten largest exploration and production companies by market cap in the S&P 500, we see an average of 11% reduction in CY2015 oil production forecasts when compared to what they were year ago (April 2014). Similarly, sales expectations for these companies have followed suit, by dropping more than 28%. As we approach first-quarter earnings season and more economic data begins to filter in, we will closely track how all this forecast data changes and will see whether previous calls were in fact correct.

CY 2015 Historical and Current Growth Projections



Source: S&P Capital IQ. Data as of Mar. 31, 2015.

Brent Crude Oil vs CY 2015 Consensus Price Target

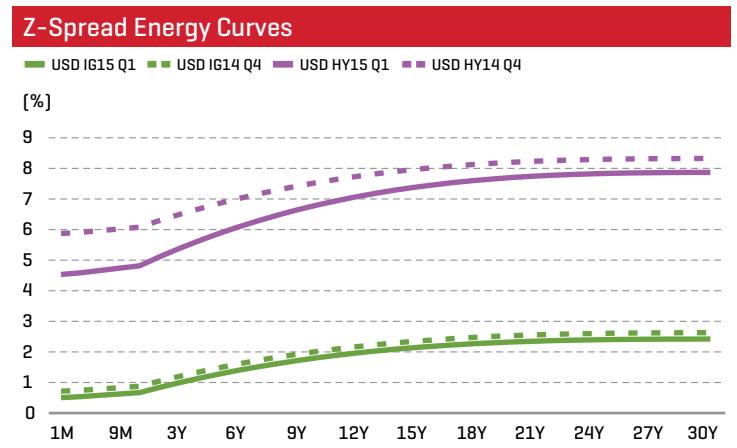
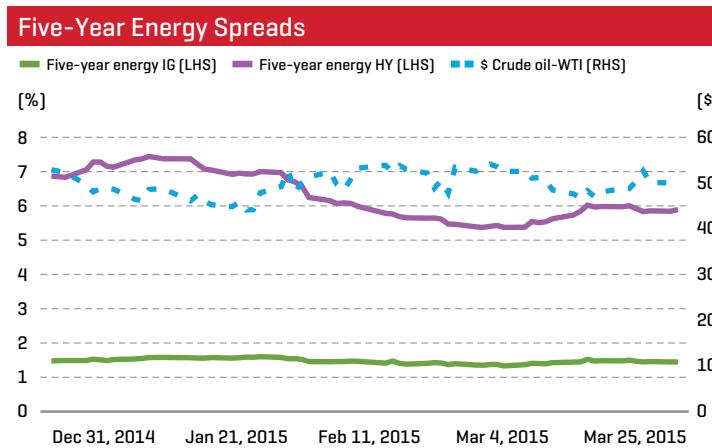


Source: S&P Capital IQ. Data as of Mar. 31, 2015.

FIXED INCOME | Market Trends

Energy Credit Spreads Evolve

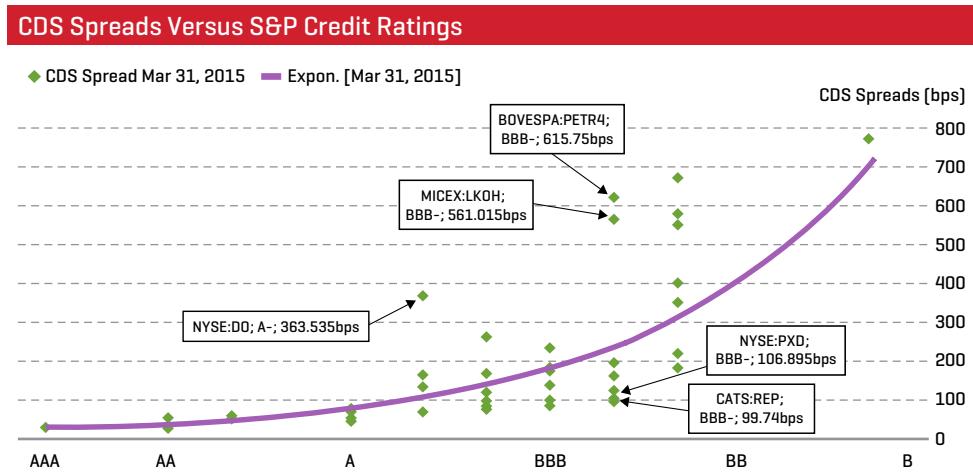
Energy credit spreads have recently compressed because the sector has rebounded from its sharp selloff in the fourth-quarter of 2014. The high yield (HY) universe is tightening more on the short-end as the perception of immediate risk has lessened. The investment-grade (IG) curve had a parallel shift downward by about 5 basis points (bps) throughout the term structure. The five-year tenor z-spread tightened by 2% and 14% for IG and HY, respectively, and this quarter's daily correlation between the spreads and WTI oil prices was -0.71 and -0.59 for IG and HY, respectively. This correlation is down from -0.96 (for both IG and HY) in fourth-quarter 2014. The bond prices are no longer moving in lockstep this quarter as the idiosyncratic risk of individual issuers is more relevant in the market as oil becomes less volatile. Despite the recent moderation within energy, the sector spreads continue to be some of the highest compared with those of the other nine sectors.



Source: S&P Capital IQ. Data as of Mar. 31, 2015. Past performance is not indicative of future results.

Comparing credit default swap (CDS) spreads with Standard & Poor's ratings we continue to observe a large range in spreads for companies rated 'BBB-'. Firms rated 'BB+' also began to display a similar broadening of spreads this quarter. The difference between the highest and lowest CDS spreads for companies with 'BBB-' and 'BB+' ratings was 509 bps and 478 bps, respectively. 'BB+' companies saw their CDS spread ranges expand significantly from only 106 bps in the fourth-quarter of 2014.

The top-five largest company movers tightened and widened by an average of 37.1% and 20.2%, respectively. With spreads tightening in only two firms last quarter, the market has swung the other way with CDS improvements for about 80% of the sector's firms during the first quarter. Furthermore, companies with big spread improvements did so in a much stronger fashion. **Valero Energy Corp.** tightened the most and was the only company on the list that primarily operates in the oil and gas refining and marketing industry. **Petrobras Brasileiro S.A.** deteriorated the most in the first quarter because as the Brazilian economy contracts and the company's corruption scandal unfolds, the market continues to consider more risk for this company.



Company name	Standard & Poor's rating (3/31/15)	Five-year CDS 12/31	Five-year CDS 3/31	Three-month spread change [%]
Three month tightening (improving)				
Valero Energy Corporation	BBB	137.3	83.6	[83.6]
Halliburton Company	A	80.5	49.1	[49.1]
Apache Corp	A-	212.9	133.6	[133.6]
Three month widening (deteriorating)				
Petróleo Brasileiro S.A. -Petrobras	BBB-	459.9	615.8	33.9
Chesapeake Energy Corporation	BB+	306.3	398.3	30.0
Marathon Oil Corporation	BBB	148.7	168.6	13.4

Source: S&P Capital IQ. Data as of Mar. 31, 2015. Past performance is not indicative of future results. Credit ratings are prepared by Standard & Poor's Ratings Services.

CREDIT | Market Perspectives

Credit Risk League Tables:

Energy company bankruptcies in 2015 outpace 2014; Prior issue league tables highlighted half of 2015 numbers

Energy risk levels continue to evolve in the current low-price oil environment. Our credit risk league tables highlight where those risks are and quantify their changes. This quarter we also looked at which companies have filed for bankruptcy and which ones appeared in our prior issue league tables. Despite a drop in risk levels during the first quarter of 2015, more bankruptcies have occurred than in all of 2015. In addition, we highlighted two of the four 2015 bankruptcies as risky companies in previous league tables.

We previously reported (Issue #3, February 2015) in our energy credit risk league tables that the decline of oil prices had a greater impact on upstream companies in fourth-quarter 2014 than on midstream and downstream companies. Although risk levels were significantly higher across the board than the previous quarter, risk for the upstream space was significantly higher than the midstream's or downstream's. Since then, the market has stabilized, and risk levels have somewhat lessened. In addition, the average upstream probability of default (PD) for the top 10 companies as of March 31, 2015, decreased to 30.75% from 49.10% on Dec. 31, 2014. As of Dec. 31, 2014, only two of the top 10 upstream companies were outside the U.S. and Canada; therefore, nonconventional North American upstream companies were feeling significant pain. In the current issue's league table, the highest risk upstream companies have a much larger global diversification with half of them outside the U.S. and Canada--perhaps reflecting either slightly more optimistic views on U.S. and Canadian companies or a more even share of risk distributed across the globe.

We believe, however, that although risk levels dropped during the first quarter, the high risk levels did not leave the industry unscathed.

Bankruptcies

Company	Announced Date	Assets at Filing*
James River Coal Co.	Apr 7, 2014	1,066.0
Matagorda Island Gas Operations, LLC	Sept 3, 2014	890.6
Marion Energy Inc.	Oct 31, 2014	166.8
Cal Dive International Inc	Mar 3, 2015	571.0
Dune Energy Inc.	Mar 8, 2015	229.5
BPZ Resources, Inc.	Mar 9, 2015	364.3
Quicksilver Resources Inc.	Mar 17, 2015	1,214.3

Source: S&P Capital IQ. Data as of Mar. 31, 2015. *Assets in \$USD Millions.

Reviewing bankruptcies of companies in the GICS energy sector with more than \$100 million in assets at filing, we found three U.S. energy companies that filed for bankruptcy in 2014: James River Coal Co., Matagorda Island Gas Operations LLC, and Marion Energy Inc. In contrast, four U.S. energy companies meeting those criteria have already filed in the first quarter of 2015: Quicksilver Resources Inc., Cal Dive International Inc., BPZ Resources Inc., and Dune Energy Inc.

Two of these four companies had appeared in our league tables in prior issues. Quicksilver Resource Inc., the largest U.S. energy company filing for bankruptcy in 2014 and 2015, appeared in our second edition (October 2014) with the second-highest upstream PD as of Sept. 15, 2014, at 37.92% (more than a one-in-three chance of default with a one-year horizon). Cal Dive International Inc., which placed seventh as of Dec. 31, 2014, filed for bankruptcy less than three months later on March 9, 2015. So although the PD model can't divine the future, an average upstream risk level of more than 30% strongly indicates that we may see bankruptcies from our current league table as well.

	UPSTREAM	PD MAPPED	PRIOR RANKING	MIDSTREAM	PD MAPPED	PRIOR RANKING	DOWNSTREAM	PD MAPPED	PRIOR RANKING
1	Lightstream Resources Ltd. [TSX:LTS] Canada	40.49% [ccc-]	3 ▲▲▲	Transportadora de Gas Del Sur S.A. [BASE:TGSU2] Argentina	29.11% [ccc-]	2 ▲	Conoil Plc [NGSE:CONOIL] Nigeria	16.29% [ccc]	4 ▲
2	North Atlantic Drilling Limited [OTCNO:NADL] Bermuda	38.50% [ccc-]	14 ▲▲▲	Titas Gas Transmission and Distribution Company Limited [DSE:TITASGAS] Bangladesh	16.50% [ccc]	4 ▲	Oando PLC [NGSE:OANDO] Nigeria	15.71% [ccc]	2
3	Afran PLC [LSE:AFR] UK	37.36% [ccc-]	100 ▲▲▲	Overseas Shipholding Group Inc. [AMEX:OSGB] US	10.23% [ccc+]	20 ▲	Byco Petroleum Pakistan Limited [KASE:BYCO] Pakistan	15.29% [ccc+]	9 ▲
4	Vantage Drilling Company [AMEX:VTG] US	29.65% [ccc-]	1 ▼	Tsakos Energy Navigation Limited [NYSE:TNP] Greece	9.80% [ccc+]	15 ▲	Attock Refinery Limited [KASE:ATRL] Pakistan	14.54% [ccc+]	8 ▲
5	Petrobras Argentina SA [BASE:PESA] Argentina	29.12% [ccc-]	24 ▲	Aegean Marine Petroleum Network Inc. [NYSE:ANW] Greece	6.83% [b-]	23 ▲	Refineria La Pampilla S.A.A. [BVL:RELAPAC1] Peru	13.94% [ccc+]	23 ▲
6	CHC Group Ltd. [NYSE:HELI] Cayman Islands	28.20% [ccc-]	27 ▲	KazTransOil JSC [KAS:KZTO] Kazakhstan	5.75% [b]	1 ▼	Shell Pakistan Limited [KASE:SHEL] Pakistan	11.82% [ccc+]	10 ▲
7	PJSC Ukrnafta [DB:UKAA] Ukraine	27.88% [ccc-]	39 ▲	Frontline Ltd. [NYSE:FRO] Bermuda	3.97% [b]	40 ▲	Pakistan Refinery Ltd. [KASE:PRL] Pakistan	11.27% [ccc+]	11 ▲
8	Pacific Rubiales Energy Corp. [TSX:PRE] Canada	27.33% [ccc-]	54 ▲▲	Oil Transporting Joint Stock Company Transneft [MICEX:TRNFP] Russia	3.71% [b]	22 ▲	Forte Oil Plc [NGSE:FO] Nigeria	10.92% [ccc+]	12 ▲
9	Nuverra Environmental Solutions, Inc. [NYSE:NES] US	24.65% [ccc]	13 ▲▲▲	Crestwood Equity Partners LP [NYSE:CEQP] US	3.55% [b+]	7 ▼	National Refinery Limited [KASE:NRL] Pakistan	10.56% [ccc+]	13 ▲
10	Savanna Energy Services Corp. [TSX:SVY] Canada	24.29% [ccc]	30 ▲▲▲	Teekay Offshore Partners LP [NYSE:TOO] Bermuda	3.49% [b+]	17 ▲▲▲	Attock Petroleum Ltd. [KASE:APL] Pakistan	10.40% [ccc+]	15 ▲

▲Higher PD, Higher Rank ▼Lower PD, Lower Rank ▲▲▲Up to 3 quarters same direction; highlighted entries are new to league table.

Top-10 highest PDs for global upstream energy companies with more than \$500 million in revenues as of March 31, 2015, and December 31, 2014, respectively, as measured by PD Model Market Signals.

¹ PDs are produced by S&P Capital IQ's probability of default model, PD Model Market Signals. The model is a quantitative equity-based model that is completely independent from Standard & Poor's Rating Services.

² PD Model Market Signals 'Mapped Scores' are represented by lowercase nomenclature to differentiate them from Standard & Poor's Rating Services credit ratings.

CREDIT ENVIRONMENT | S&P Ratings

Outlook for U.S. Refining Sector Remains Stable

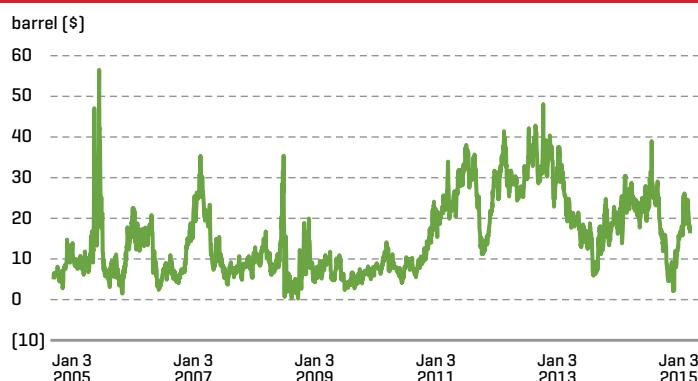
The steep drop in crude prices since the end of September 2014 has dramatically cut the profitability of E&P companies but has had less of an impact on their downstream counterparts. U.S. refiners have managed to generate good returns during this volatile time period largely because crack spreads, the primary driver of refining profit margins, remain in line with historical levels. For instance, although the WTI Midland 3-2-1 crack narrowed to just below \$2/barrel in late December 2014, it averaged \$13.53/barrel during the past six months, which is only slightly below the 10-year average. Of late, discounted crude feedstocks prompted by record stockpiles are fueling this dynamic. After more than two years of backwardation, the crude futures market reversed course in October 2014 and remains in contango today. Contango markets encourage industry participants to store crude because it can be purchased at 'spot' prices today, stored for a period of time, and sold at a higher amount in the future thereby generating positive cash flow. This dynamic has led U.S. crude inventory to rise to its highest level since the EIA (Energy Information Administration) began tracking the data in 1982. As of March 2015, the EIA reported that U.S. stored crude equaled 471 million barrels, which is 28% and 35% higher than the five- and 10-year averages, respectively. This build equals around 30 days of total crude processed by U.S. refineries. It is difficult to predict when inventories may come down, but the current surplus is putting downward pressure on crude prices to refiners' benefit, particularly those oriented in the Midwest and Gulf Coast.

The product side of the equation remains less supportive though.

Until recently, both gasoline and distillate prices were trading at multiyear lows. A bout of cold weather that created supply shortages in the northeast and unanticipated refinery outages has only recently caused these commodities to move higher; however, we anticipate the longer-term trend of modest demand destruction to persist. Demand for both products has declined since 2008 largely because of greater motor fuel efficiency and the ethanol's replacement of gasoline as mandated by the Renewable Fuels Standard. Standard & Poor's Ratings Services economists' forecasts of 3% and 2.8% GDP growth in 2015 and 2016, respectively, would only partially offset these negative forces. That said refiners with export capabilities may benefit from the option of selling product into international markets thus avoiding the pricing pressure of regional dynamics. The U.S. is currently exporting nearly 3.9 million b/d of refined products, up from 1.7 million b/d in 2010.

Given today's overall supportive operating environment, we expect that the majority of refining companies we rate--including Valero Energy Corp., Marathon Petroleum Corp., and Phillips 66--will maintain adequate liquidity and sufficient cushion in our forecast ratios relative to benchmark ranges throughout this year. As of March 2015, all but one (Calumet Specialty Products Partners L.P.) of our U.S. refining credits have stable or positive outlooks. However, forecasting oil refining profit margins is notoriously difficult because of the sector's extreme volatility and unanticipated events, such as a recession or operating difficulties, which would likely trigger negative outlooks.

WTI Midland 3-2-1 Crack Spread



U.S. Crude Oil Stocks



For additional articles, hot topics, and events from Standard & Poor's Ratings Services, please click [here](#).

DEALS | M&A Activities

Energy Prices Drag on Merger and Acquisition Activity

Top 5 Energy M&A Deals Q1 2015

Transaction Status	Target	Total Transaction Value [mil. \$]	Buyer	Percent Sought (%)	Implied Enterprise Value [mil. \$]	Implied Equity Value [mil. \$]	Implied Enterprise Value/Revenues [x]	Implied Enterprise Value/EBITDA [x]	Implied Enterprise Value/EBIT [x]	Energy Subsector	Buyer Type
Announced	Regency Energy Partners LP [NYSE:RGP]	18,823.29	Energy Transfer Partners, L.P. [NYSE:ETP]	100	18,799.29	11,217.29	3.87	17.28	34.37	Downstream	Strategic Buyer
Closed	Hiland Partners, LP	3,000	Kinder Morgan, Inc. [NYSE:KMI]	100	3,000	-	-	-	-	Midstream	Strategic Buyer
Closed	19.46% in Explorer Pipeline Company and 33.33% stake in DCP Sand Hills Pipeline, DCP Southern Hills	1,081.13	Phillips 66 Partners LP [NYSE:PSXP]	100	1,081.13	1,016.13	-	-	-	Midstream	Strategic Buyer
Announced	Eurasia Drilling Company [LSE:EDCL]	990.96	EDC Acquisition Company Limited	30.67	3,771.77	3,231.04	1.13	4.19	5.85	Upstream	Strategic Buyer
Closed	EQT Gathering, LLC, Northern West Virginia Marcellus Gathering System	925.68	EQM Gathering Opcos, LLC	100	925.68	925.68	-	-	-	Midstream	Strategic Buyer

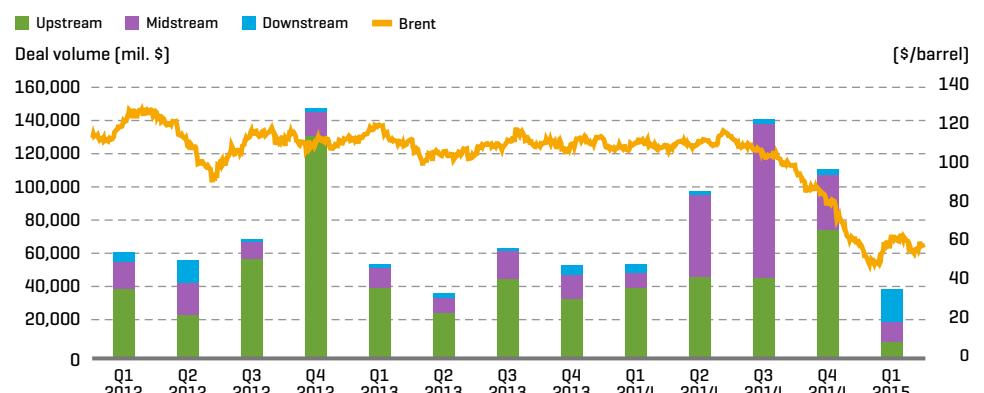
Source: S&P Capital IQ. Data as of Mar 31, 2015.

The plunge in oil prices and the uncertainty of a price recovery hampered announced energy worldwide merger and acquisition (M&A) activity during the first quarter of 2015. Exemplifying this condition, only four transactions worth more than \$1 billion occurred, marking the first time since second-quarter 2013 that the number of quarterly energy deals worth more than a billion dollars was in single digits. This was also the lowest quarterly count since the first quarter of 2005 when only three deals took place.

But deal count wasn't the only figure that took a hit. Energy M&A activity took a major turn both in aggregate value and in industry characteristics. The first quarter had just \$40.4 billion worth of deals, which is the lowest quarterly deal value in nearly two years when the second quarter of 2013 had only \$38.1 billion in M&A transactions. However, these low figures aren't consistent among energy's subsectors. Upstream M&A deals, which have averaged more than \$54 billion in quarterly value during the past 10 quarters, saw just \$10.3 billion these past three months. But for downstream companies, quarterly deal value soared to \$18.8 billion from \$2.8 billion after **Energy Transfer Partners L.P.** proposed purchasing **Regency Energy Partners L.P.** for \$18.8 billion.

Although overall energy deal counts are down, they are flourishing in the Americas where nearly 59% of targets, or 158 of the 269 announced deals occurred. Upstream deals accounted for the lion's share with 117 E&P deals, or 74% of the region's deal activity. Regarding valuation, buyers of upstream targets in the Americas during first-quarter 2015 paid the highest multiples with an average multiple of 6.0x EBITDA compared with a 4.2x multiple for European targets and a 2.1x multiple for the Asia/Pacific region. With S&P 1500 oil and gas companies holding \$178 billion in cash and investments on their collective balance sheets, there appears to be sufficient resources for potential buyers to start exploring acquisition opportunities.

Global Deal Value Versus Oil Pricing (By Category)*



*Upstream: Oil and Gas Drilling; Oil and Gas Equipment and Services; Integrated Oil and Gas; Oil & Gas Exploration and Production.

Midstream: Oil and Gas Storage and Transportation. Downstream: Oil and Gas Refining and Marketing.

Source: S&P Capital IQ. Data as of Mar. 31, 2015. Past performance is not indicative of future results.

For more content like this, check out "Deal Detector," S&P Capital IQ reports designed to alert investors to potential investment ideas ahead of prospective M&A announcements, while uncovering sector and industry trends in M&A activity. "Deal Detector" is available on the S&P CapitalIQ platform. For information on subscribing to "Deal Detector," please contact: SectorIQ@spcapitaliq.com.

EXTERNAL PERSPECTIVE

The Tyranny of Density

by Robert Bryce, Manhattan Institute

This article is an adapted from Robert Bryce's recently published book, Smaller Faster Lighter Denser Cheaper: How Innovation Keeps Proving the Catastrophists Wrong (PublicAffairs.)

Robert Bryce was the keynote speaker for **S&P Capital IQ's 7th Annual Energy Symposium.**

The recent collapse in global prices has led to widespread speculation about the future of OPEC and the ability of US shale-oil producers to weather a prolonged period of low prices. Over the past few months, energy analysts and pundits have repeatedly speculated about the “break-even” price for US drillers and how that price floor might affect global production and geopolitics.

While we can never be assured of stable prices, we can be certain that people will always be saying silly things about oil. And among the Mount Everest of inanities ever uttered on the subject of petroleum, the blue-ribbon winner must surely be this one: “the tyranny of oil.”

Both Barack Obama and Robert F. Kennedy Jr. have used the line. Obama claimed it for his own in 2007 during a speech in which he declared his run for the White House. While standing on the steps of the Old State Capitol in Springfield, Illinois, Obama said, “Let’s be the generation that finally frees America from the tyranny of oil.”^[1]

In March 2013, during a speech at Sandhills Community College in North Carolina, Kennedy, a high-profile opponent of the Keystone XL pipeline (he was arrested at the White House during an anti-Keystone protest), said “we need to free ourselves from the tyranny of oil.”^[2]

That Obama and Kennedy—both of whom went to Harvard—are claiming that a super-high-energy density substance that can be deployed for innumerable purposes, from pumping well water in Kenya to emergency generation of electricity in Lower Manhattan, is somehow bad or even yet, tyrannical, is nonsense on stilts. Rather than talk about the tyranny of oil, the two Harvard grads might as well be complaining about the tyranny of physics. Or better yet, the tyranny of density.

Few substances this side of uranium come close to touching oil when it comes to the essential measure of energy density: the amount of energy (which is measured in joules or BTUs) that can be contained in a given volume or mass. In addition to petroleum’s high energy density, it is stable at standard temperature and pressure, relatively cheap, easily transported, and can be used for everything from making shoelaces to fueling jumbo jets.

Oil’s tyranny of density can be demonstrated by looking at the aviation sector and by doing a tiny bit of math. To make the math easy, let’s

use metric units. And let’s focus on weight, as that factor is critical in aerospace. The gravimetric energy density of jet fuel is high: about 43 megajoules (million joules) per kilogram. (Low-enriched uranium, by the way, is 3.9 terajoules—trillion joules—per kilogram.)^[3]

Keep those numbers in mind as we look at the best-selling jet airliner in aviation history: the Boeing 737^[4]. A fully fueled 737-700 holds about 26,000 liters of jet fuel, weighing about 20,500 kilograms. That amount of fuel contains about 880 gigajoules (billion joules) of energy. The maximum take-off weight for the 737-700 is about 78,000 kilograms, therefore jet fuel may account for as much as 26 percent of the plane’s weight as it leaves the runway.^[5]

Obama and Kennedy are big fans of electric cars^[6]. Lithium-ion batteries have higher energy density than most other batteries, holding about 150 watt-hours—540,000 joules—of energy per kilogram.^[7] Recall that jet fuel contains about 43 million joules per kilogram, or nearly 80 times as much energy. Therefore, if Boeing were trying to replace jet fuel with batteries in the 737-700, it would need about 1.6 million kilograms of lithium-ion batteries. Put another way, to fuel a jetliner like the 737-700 with batteries would require a battery pack that weighs about 21 times as much as the airplane itself.

Prefer to use a “green” fuel like firewood? With an energy density of about 16 megajoules per kilogram, that same 737-700 would require about 55,000 kilograms of wood. With that much kindling onboard, rest assured there won’t be room in the overhead bin for your carry-on bag.

Even at 35,000 feet, the simple truth is obvious: the only tyranny at work in our energy and power systems is that of simple math and elementary-school physics. Obama and Kennedy may not like oil, and their allies on the Left may hate Shell/BP/Marathon/Exxon/Saudi Aramco/Chevron/Keystone XL, but here’s the reality: oil is a miracle substance. Without it, modern society simply would not be possible.

Indeed, if oil didn’t exist, we would have to invent it. No other substance comes close to oil when it comes to energy density, ease of handling, and flexibility. Those properties explain why oil provides more energy to the global economy than any other fuel.^[8] (Oil provides about 33 percent, coal provides 30 percent, natural gas provides 24 percent, and hydro, 7 percent. The balance comes from nuclear and renewables.) It also explains why more than 90 percent of all transportation continues to be fueled by petroleum products.

Rather than condemning the fuel that makes modern life possible, our political leaders should be figuring out how we can make oil more available to more people at lower cost.

^[1] PCBS News, “Transcript of Barack Obama’s Speech,” February 10, 2007. Available: <http://www.cbsnews.com/stories/2007/02/10/politics/main2458099.shtml>.

^[2] <http://fayobserver.com/articles/2013/03/02/1240799>.

^[3] World Nuclear Association, “Heat values of various fuels,” March 5, 2010, <http://world-nuclear.org/info/Facts-and-Figures/Heat-values-of-various-fuels/#.Ud3slz54ZD0>.

^[4] Wikipedia, http://en.wikipedia.org/wiki/Boeing_737.

^[5] See b737.org, <http://www.b737.org.uk/techspecsDetailed.htm>.

^[6] <http://www.climate-one.org/transcripts/robert-f-kennedy-jr-transcript>.

^[7] Bart Jansen, “Questions focus on Boeing’s 787 Dreamliner’s batteries,” USA Today, January 17, 2013, <http://www.usatoday.com/story/travel/flights/2013/01/17/dreamliner-batteries/1842871/>

^[8] BP Statistical Review of World Energy 2012.

MCGRAW HILL FINANCIAL DRILL DOWN

McGraw Hill Financial is a leader in credit ratings, benchmarks and analytics for the global capital and commodity markets. Home to some of the most iconic brands in finance and business, including Standard & Poor's Ratings Services, S&P Capital IQ, S&P Dow Jones Indices, and Platts, our independent credit ratings, indices, analytics, price assessments and research provide clients with the essential intelligence to manage risk and identify opportunities to grow.

Learn more at www.mhfi.com.

LIST OF CONTRIBUTORS

Thomas Yagel
thomas.yagel@spcapitaliq.com

Jay Bhankharia, CFA
jaybhankharia@spcapitaliq.com

Rocco Canonica
rcanonica@bentekenergy.com

Jenna Delaney
jdelaney@bentekenergy.com

James Elder
james.elder@spcapitaliq.com

Stewart Glickman
stewart.glickman@spcapitaliq.com

Alyssa Le
ale@spcapitaliq.com

David Lundberg
david.lundberg@standardandpoors.com

Brandon Newland
bnewland@spcapitaliq.com

Temilade Oyeniyi
toyeniyi@spcapitaliq.com

Anthony Starkey
tstarkey@bentekenergy.com

Michael Patton
mpatton@spcapitaliq.com

Richard Peterson
richard.peterson@spcapitaliq.com

Robert Bryce
robert@robertbryce.com

Nora Pickens
nora.pickens@standardandpoors.com

Dhwani Vahia
dvahia@spcapitaliq.com

Paul Waine
paul.waine@platts.com



**McGRAW HILL
FINANCIAL**
Essential Intelligence

STANDARD & POOR'S RATINGS SERVICES

S&P CAPITAL IQ

PLATTS

S&P DOW JONES INDICES

FOR ADDITIONAL MHFI ENERGY INSIGHTS, PLEASE VISIT:

www.bentekenergy.com

www.platts.com

www.spratings.com/oilandgas

www.spcapitaliq.com/our-thinking

Not yet a subscriber?

Visit www.spcapitaliq.com/sectoriq.

Questions, Comments? Contact us at
SectorIQ@spcapitaliq.com.

We welcome your feedback to SectorIQ@spcapitaliq.com.

Copyright © 2015 by Standard & Poor's Financial Services LLC. All rights reserved.

No content [including ratings, credit-related analyses and data, valuations, model, software or other application or output therefrom] or any part thereof [Content] may be modified, reverse engineered, reproduced or distributed in any form by any means, or stored in a database or retrieval system, without the prior written permission of Standard & Poor's Financial Services LLC or its affiliates [collectively, S&P]. The Content shall not be used for any unlawful or unauthorized purposes. S&P and any third-party providers, as well as their directors, officers, shareholders, employees or agents [collectively S&P Parties] do not guarantee the accuracy, completeness, timeliness or availability of the Content. S&P Parties are not responsible for any errors or omissions [negligent or otherwise], regardless of the cause, for the results obtained from the use of the Content, or for the security or maintenance of any data input by the user. The Content is provided on an "as is" basis. S&P PARTIES DISCLAIM ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT'S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall S&P Parties be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses [including, without limitation, lost income or lost profits and opportunity costs or losses caused by negligence] in connection with any use of the Content even if advised of the possibility of such damages.

Credit-related and other analyses, including ratings, and statements in the Content are statements of opinion as of the date they are expressed and not statements of fact. S&P's opinions, analyses and rating acknowledgment decisions [described below] are not recommendations to purchase, hold, or sell any securities or to make any investment decisions, and do not address the suitability of any security. S&P assumes no obligation to update the Content following publication in any form or format. The Content should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions. S&P does not act as a fiduciary or an investment advisor except where registered as such. While S&P has obtained information from sources it believes to be reliable, S&P does not perform an audit and undertakes no duty of due diligence or independent verification of any information it receives.

To the extent that regulatory authorities allow a rating agency to acknowledge in one jurisdiction a rating issued in another jurisdiction for certain regulatory purposes, S&P reserves the right to assign, withdraw or suspend such acknowledgement at any time and in its sole discretion. S&P Parties disclaim any duty whatsoever arising out of the assignment, withdrawal or suspension of an acknowledgment as well as any liability for any damage alleged to have been suffered on account thereof.

S&P keeps certain activities of its business units separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain business units of S&P may have information that is not available to other S&P business units. S&P has established policies and procedures to maintain the confidentiality of certain non-public information received in connection with each analytical process.

S&P may receive compensation for its ratings and certain analyses, normally from issuers or underwriters of securities or from obligors. S&P reserves the right to disseminate its opinions and analyses. S&P's public ratings and analyses are made available on its Web sites, www.standardandpoors.com [free of charge], and www.ratingsdirect.com and www.globalcreditportal.com [subscription], and may be distributed through other means, including via S&P publications and third-party redistributors. Additional information about our ratings fees is available at www.standardandpoors.com/usratingsfees.