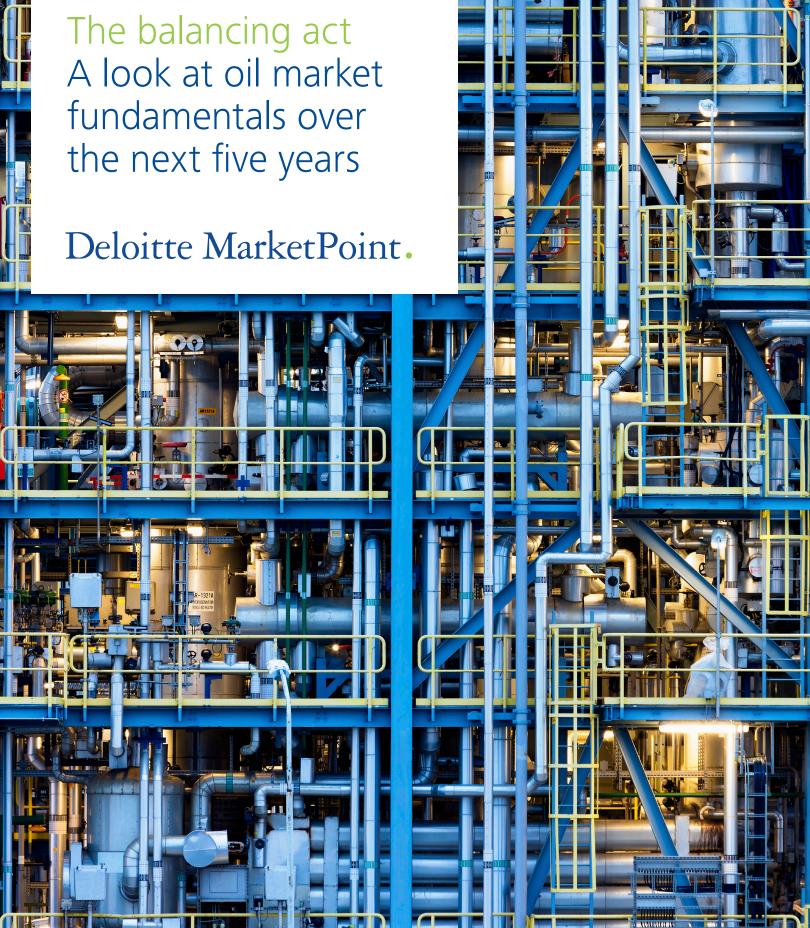
Deloitte. The balancir A look at oil





Contents

Introduction	1
Setting the stage: A review of the fundamentals	2
Production outlook	3
Demand: 2016–2020	8
Storage	10
Petroleum liquids balance outlook	11
Oil price outlook and potential recovery	13
Conclusion	16



Introduction

Since mid-2014, the crude oil market cycle has turned downward, resulting in ever lower prices, leading to deep capital expenditure (CAPEX) reductions, and creating turmoil across the oil and gas industry. Recently, market prices briefly slipped below \$30 per barrel (/bbl). Some analysts are predicting even lower prices while others are arguing for a modest recovery—at least in the near term. The current downturn has been brought on by a variety of factors including, but not limited to, the US tight oil revolution, the Organization of Petroleum Exporting Countries' (OPEC) new strategy led by Saudi Arabia to protect market share rather than balance the market, the lifting of sanctions on Iran, growing inventory levels of crude oil and refined products worldwide, and expectations of slower world oil demand growth due to a worldwide economic downturn.

In February 2015, Deloitte MarketPoint and the Deloitte Center for Energy Solutions released "Oil Prices in Crisis," an analysis of the then current oil market. That paper considered the factors leading up to the collapse in oil prices. In this paper, Deloitte MarketPoint reviews recently released market data and examines changes in oil supply and demand in light of lower price expectations. We also discuss the net effect these could have on future oil prices over the next five years using our MarketBuilder² World Oil Model and Reference Case. We will examine:

- The growing list of delayed development projects
- New production still expected to come online
- Increased Iranian production resulting from the lifting of sanctions
- Current and future demand outlooks
- A comparison of Deloitte MarketPoint's Reference Case outlook to the forward curve

Setting the stage: A review of the fundamentals

By the end of 2015, the international crude benchmark Brent had dropped from its 2014 high of \$115/bbl to below \$35/bbl. Despite the price decline, OPEC has maintained a strategy focusing on retaining market share, rather than cutting production to balance the market and raise prices as it had in prior downturns. In reaction to the price decline, oil and gas producers began cutting back on their CAPEX budgets starting in early 2015 expecting (or hoping?) crude might stabilize in the \$55/bbl to \$65/bbl range. Despite these initial CAPEX reductions, US tight oil production continued to grow for a variety of reasons, including forward hedging contracts, cost reductions and efficiency gains due to growing slack in the service industries, and the ongoing need for cash flow to service accumulated debt. With continued production growth over the course of 2015 and demand growth that couldn't keep pace, oil prices continued to drop. Producers have now reluctantly embraced the "lower for longer" view of energy prices and, in many cases, are aggressively cutting budgets and staff.

In terms of supply and demand balance for 2015, the Energy Information Administration's (EIA) February 2016 Short Term Energy Outlook³ estimates that global liquids production grew by 2.2 million barrels per day (b/d) while demand only grew by an estimated 1.4 million b/d (see Figure 1). This drove excess liquids into storage, which has boosted commercial inventories to a new high of nearly 3 billion barrels. What is more interesting is by mid-2014, when oil prices had already begun to soften, the stream of new projects already under construction continued. This resulted in world production increasing by nearly 1.0 million b/d from Q4 2014 to Q4 2015 and highlights the impact long capital lead times can have on markets. Although prices were clearly softening, oil producers were unable, and in some cases unwilling, to curb production growth.

Figure 1. World liquid fuels production and consumption

Source: EIA, Short Term Energy Outlook, February 2016

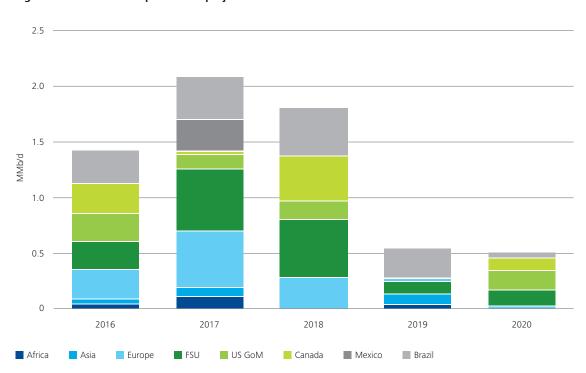
Production outlook

New projects

Despite the current global crude glut, numerous new projects are expected to come online in non-OPEC countries over the next few years. These projects were commissioned when oil was \$100+/bbl, and are now too far along to be stopped. To estimate production volumes from these projects, we leveraged information from the International Energy Agency's (IEA) 2014 Medium-Term Oil Market Report⁴ and supplemented it with other publically announced data. 5 We then validated project online dates using publicly available company data, press releases, and

industry articles. Based on this analysis, which is summarized in Figure 2, we identified 90 projects still expected to come online resulting in nearly 6.4 million b/d of new crude production over the next five years. Three regions—the former Soviet Union (FSU), Europe, and Brazil—are expected to contribute over 65 percent of the growth, with the FSU leading the pack with almost 1.6 million b/d expected to come online through 2020. Although Canadian oil sands are a relatively high-cost source, projects already under construction will add an estimated 0.8 million b/d through 2020 with nearly 0.3 million b/d coming online in 2016.

Figure 2. Estimated new production projects from non-OPEC countries



Source: Deloitte MarketPoint Analysis

OPEC production

We now turn to OPEC to review its current production levels and discuss its ability to increase production. Although OPEC production exceeded 32 million b/d in 2015⁶ (including Indonesia which rejoined OPEC), its near-term growth (excluding Iran) may be limited. Saudi Arabia and Iraq accounted for 1.2 million b/d⁷ of the growth in 2015. As for Saudi Arabia, there is some question whether current production levels can continue despite the estimated spare capacity of roughly 2 million b/d.8 For Iraq, the current low price environment is impacting its coffers and CAPEX budget. There have been anecdotal reports that the Iraqi government has asked upstream companies to cut budgets and hold production steady and the Kurdistan Regional Government is struggling to pay upstream contractors.9 If these reports are true, then Iraqi production may be flat or even decline in 2016. Finally, as of February 2016, a number of reports have surfaced about OPEC setting a production freeze based on January 2016 production levels. Recent discussions have also included Russia, and this has helped move oil prices higher. 10 However, it's hard to see how Iran would agree to a production freeze now in light of the recent lifting of sanctions on the country.

How much can Iran produce and how soon? This is one of the two main "supply wild cards" impacting oil markets. The IEA expects Iran is capable of returning to its pre-sanction output level of 3.6 million b/d within six months of the sanctions being lifted. To Deloitte MarketPoint's Reference Case analysis, we use a conservative estimate that Iranian production will grow by 0.5 million b/d in 2016 and continue upward thereafter. If we assume this is the only production growth for OPEC, as Saudi Arabia and Iraq are expected to have flat production in the near term, OPEC's production will grow by only 1.6 percent in 2016 compared to over 3.2 percent in 2015.

How much can Iran produce and how soon? This is one of the two main "supply wild cards" impacting oil markets.

US tight oil production

The second "supply wild card" is US tight oil, specifically in three major basins: the Permian, Bakken, and Eagle Ford. The EIA's latest monthly crude production data shows, despite the continued decline in prices, Permian basin production continued to grow. 12 According to the EIA, average production for 2015 through November was 1.9 million b/d, a 272 thousand b/d increase over 2014 production. Hedging contracts and efficiency gains by large players in the Permian are largely responsible for the production growth, which is expected to continue in 2016. Based on the current trajectory, we estimate Permian crude production to average nearly 2.1 million b/d in 2016.

The Bakken on the other hand has experienced steadily declining production month over month from its peak in June 2015 of 1.24 million b/d. Based on EIA's actual production data through November 2015, production has dropped by 64 thousand b/d. The EIA's January 2016 Drilling Productivity Report (DPR) is forecasted Bakken production to reach 1.1 million b/d by March 2016. Deloitte MarketPoint projects average 2016 production will only be 1 million b/d. But given the level of CAPEX cuts and decline rates, this could be conservative.

The Eagle Ford has seen the most drastic production impact of the three major basins. Production peaked in March 2015 at 1.7 million b/d and had dropped 287 thousand b/d by November 2015. The EIA expects the decline to continue and forecasts production to reach only 1.22 million b/d by February 2016. ¹⁵ Deloitte MarketPoint estimates Eagle Ford production will average 1.0 million b/d in 2016.

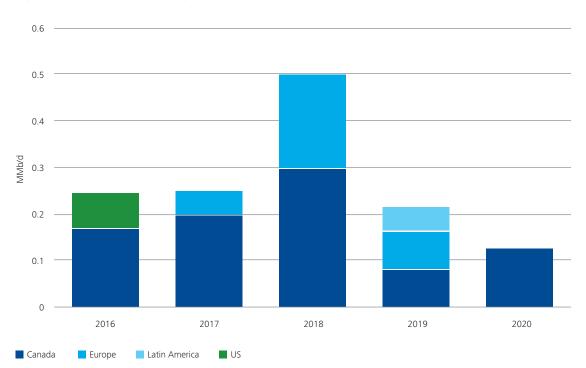
In total, Deloitte MarketPoint estimates US tight oil production in 2016 will decline by around 700 thousand b/d. As for the rest of the US, we expect fairly flat production growth year-over-year as gains in offshore production are mostly offset by conventional onshore declines. This puts Deloitte MarketPoint's US crude production at around 8.7 million b/d, which is roughly in line with the EIA's February 2016 Short Term Energy Outlook.

Crude oil project cutbacks

The steep decline in oil prices over 2015 and the "new reality" of low prices for a longer period of time have led to the deferral of many high-cost projects (see Figure 3). Based on research of public data and news releases, non-OPEC cancellations and postponements are expected to include 1.3 million b/d of production over the next five years. A sizable portion (nearly 1 million b/d) of these is related to high-cost Canadian oil sands projects that are not too late to be stopped.

An additional uncertainty regarding future production volumes is related to stripper well production. Sustained low crude prices are likely to impact US stripper wells if prices continue to fall. According to the National Stripper Well Association, there are over 400,000 stripper wells in the US accounting for an estimated 1 million b/d of production. These wells require crude prices in the low \$30s /bbl in order to cover operating costs for these low volume wells.¹⁶

Figure 3. Estimated deferred projects from non-OPEC countries



Source: Various public news releases and company web sites

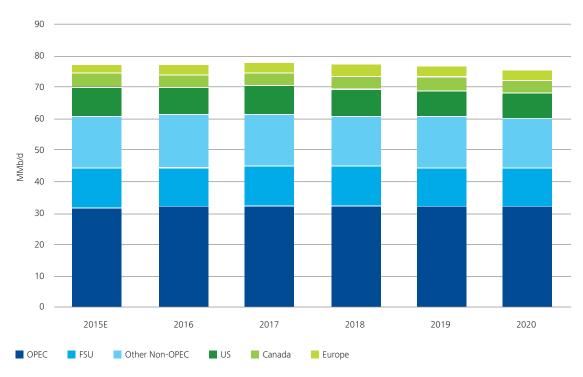
Deloitte MarketPoint's production outlook

To develop Deloitte MarketPoint's production outlook, we assume OPEC, with the exception of Iran, will continue to produce at current levels through 2020. We assume Iran will produce an incremental 500 thousand b/d in 2016 and grow an additional 300 thousand b/d in 2017, putting Iran roughly back at pre-sanction production levels by the end of 2017.

For non-OPEC producers, we build up a detailed analysis of production: For US tight oil and onshore, we expect production declines for 2016 while the US Gulf of Mexico will likely have some offsetting production growth. As for other non-OPEC countries' 2016 production, we expect an increase in Canada, Europe, Brazil, and the FSU as a result of the new projects already under development. Some of this new production could be offset by higher decline rates due to reduced maintenance as a result of budget cuts. The net effect for 2016 non-OPEC production is an overall decline of 0.6 million b/d to 44.5 million b/d (crude and lease condensate).

2017 should see production growth of 600 thousand b/d. By 2018, we finally see production declining back to 2016 levels, which then continues downward, resulting in a nearly 2 million b/d decline from 2018 to 2020.

Figure 4. World crude production forecast (crude and non-OPEC lease condensate)



Source: Deloitte MarketPoint Analysis

For 2017 through 2020, we apply decline rate estimates for existing production. Leveraging analysis discussed in the EIA's World Energy Outlook 2013, 17 we estimate non-OPEC annual decline rates at 4 percent. This reflects our estimate of an overall global average including both high-decline rate regions (e.g., US tight oil) as well as low-decline rate regions. We then added the new projects remaining in development (see Figure 2, page 3). The net effect is 2017 should see production growth of 600 thousand b/d. By 2018, we finally see production declining back to 2016 levels, which then continues downward, resulting in a nearly 2 million b/d decline from 2018 to 2020.

Given the numerous deferred projects and the time required to develop new ones, our analysis indicates the severe project cutbacks could eventually lead to a shortfall in future production. To determine how much of a shortfall, we need to look at both demand forecasts and the impact that could result from drawing down excess inventories of crude oil in storage.



Demand: 2016-2020

According to the latest demand data from the EIA, IEA, and OPEC Secretariat (summarized in Figure 5), 2015 liquids demand grew between 1.5 percent and 1.8 percent. Contributors to demand growth were the US and Europe, China, India, other Asia-Pacific countries, and the Middle East (excluding Iran).

For 2016, all three agencies see continued liquids demand growth. The IEA and OPEC are both forecasting growth at 1.3 percent, a slower rate than their 2015 estimates. The EIA on the other hand is more optimistic and estimates growth to remain flat at 1.5 percent. All three forecasts are pessimistic about the Organization for Economic

Co-operation and Development (OECD) country growth projecting between zero and 0.3 million b/d, which is roughly one-half of the growth achieved in 2015. This pessimism may be based on the premise that gasoline consumption has been the primary source of demand growth and there is uncertainty over how much further this can increase.

The three agencies share some optimism toward non-OECD growth, which is expected to be around 1.0 million b/d. This is likely based on the expectation that China's vehicle fleet will continue to grow and that drivers will increase their miles traveled.

Figure 5: Summary of Demand Forecasts by Reporting Entity

Global Petroleum and Other Liquids Fuel Demand Forecast by Reporting Entity (MMb/d)

Energy Information Administration

	2014A	2015E	2016F
Demand	92.4	93.8	95.2
Growth	1.2	1.4	1.4
Growth %	1.3%	1.5%	1.5%

International Energy Agency

	2014A	2015E	2016F
Demand	92.8	94.5	95.7
Growth	0.9	1.7	1.2
Growth %	1.1%	1.8%	1.3%

OPEC Secretariat

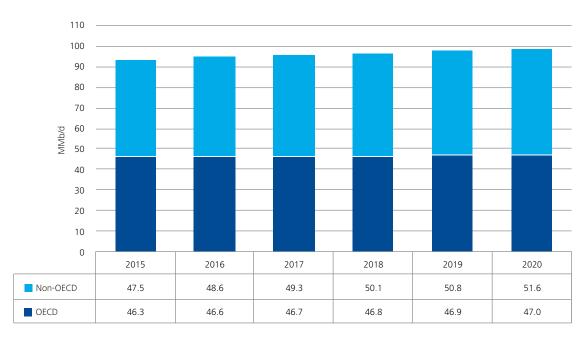
	2014A	2015E	2016F
Demand	91.4	93	94.2
Growth	1.2	1.6	1.2
Growth %	1.3%	1.8%	1.3%

EIA, Short Term Energy Outlook, February 2016

IEA, Oil Market Report, February 2016 OPEC Secretariat, Monthly Oil Market Report, February 2016

If we use the EIA's expectations for 2016 liquids consumption as a starting point and apply the 2010-2015 average CAGR for developing consumption growth rates for 2017 through 2020, we would calculate a 0.22 percent growth rate for OECD countries and 2.28 percent for non-OECD countries. Given the slowdown in China, Deloitte MarketPoint has assumed a slightly more conservative growth rate for non-OECD countries of 1.5 percent. Figure 6 shows the impact of these growth rates on demand. Based on these assumptions, total world liquids demand growth for 2016 reflects the EIA's growth rate of 1.5 percent while our calculated total liquids growth rate for 2017 through 2020 is only 0.9 percent.

Figure 6. World liquids consumption forecast



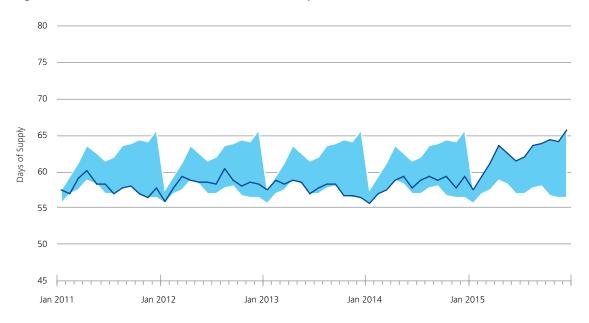
Source: Deloitte MarketPoint Analysis

Storage

What about the abnormally high storage present in the current crude market? The EIA's data shows OECD Industry Petroleum Stocks have averaged 2.7 billion barrels from 2011 to 2014. The latest 2015 data shows December 2015 stock levels at 3 billion barrels. 18 Therefore, we can estimate

storage is carrying an excess of around 300 million barrels of petroleum liquids (or roughly 6.4 days of excess supply based on current OECD liquids demand). For reference, Figure 7 shows the current and historical number of days of total OECD liquids supply in storage.

Figure 7. OECD commercial stocks of crude and other liquids



Note: Colored band around days of supply of crude oil and other liquids stocks represents the range between the minimum and maximum from Jan. 2011–Dec. 2015.

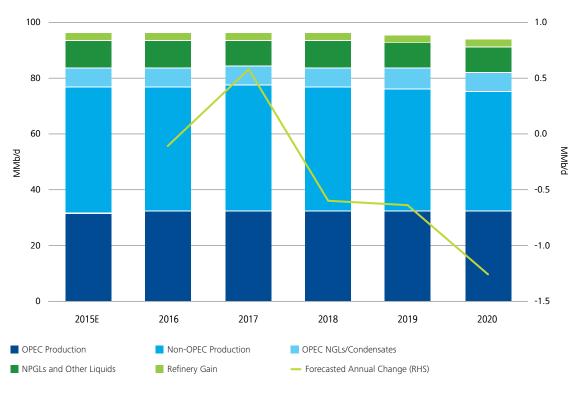
Source: EIA, Short-Term Energy Outlook, February 2016

Petroleum liquids balance outlook

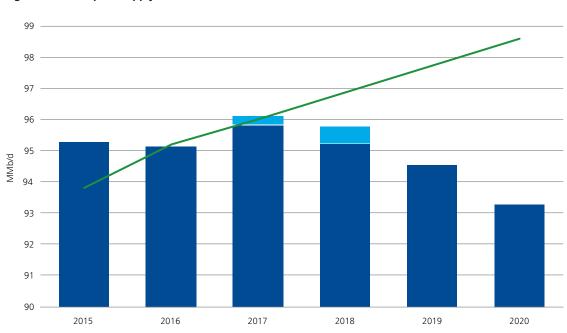
Now that we have the total liquids demand forecast and a crude oil supply forecast, we need to add non-crude liquids production to supply to determine the total petroleum liquids balance going forward. For this, we have leveraged EIA historical data to estimate non-crude liquids production. For simplicity, we kept these volumes static over the forecast period with the exception of OPEC NGLs and condensates, which we anticipate will grow by roughly 0.3 million b/d with the lifting of the Iranian sanctions. As shown in Figure 8, the forecast total liquids supply peaks at 95.8 million b/d in 2017 and declines to 93.3 million b/d by 2020.

Comparing the total liquids supply forecast with our liquids demand forecast (see Figure 9), we show annual volumes are roughly in balance by the end of 2016, but we would see a supply shortage of around 0.29 million b/d by 2017—without available drawdowns from inventory. Presently, the 300 million barrels of excess storage could cover the entire 2017 shortfall by using only about one-third of the current excess. The remaining excess storage could be drawn down for 2018, which reduces the overall shortage to 1.14 million b/d. As one can see, the shortfall of production is projected to widen beyond 2017. By 2020, the shortfall could reach over 5 million b/d.

Figure 8. Total liquids supply forecast



Source: Deloitte MarketPoint Analysis



Demand

Figure 9. Total liquids supply/demand forecast

Source: Deloitte MarketPoint Analysis

■ Total Liquids Production

This projection is illustrative only and is designed to show what might happen, assuming no additional new production beyond what was previously discussed occurs. Yet production is more than likely to come online with the appropriate price signals. Previously deferred and delayed projects could be developed, but many will require long development lead times. Therefore, in the short term, only two potential material sources for responsive production growth likely exist: US tight oil, and possibly OPEC. Although OPEC's true spare capacity remains uncertain.

Storage Drawdown

US tight oil producers stand ready and anxious to strike. They have proven in the past to have an ability to generate growth quickly, they have become ultra-efficient, and they are now able to operate at lower breakeven prices. Yet, there is the question about the long-term impact of the current market downturn on tight oil's ability to bounce back quickly. They will be operating with "bloodied" balance sheets, reduced headcount, a lean service industry, and lenders that will likely be more cautious with their lending practices.

Oil price outlook and potential recovery

Many views have been expressed about the eventual shape of the oil price recovery: Will markets follow a short "V-shape" recovery or will a more extended period of soft prices create a "U-shape" price curve? The period 2008–2009 saw a relatively dramatic price and demand decline, which fell by 2.3 percent over the two-year period. In response to the demand decline, OPEC reacted with production cuts which supported 2010's rapid oil price rise, creating the V-shape recovery. Today's market decline is associated more with large increases in supply rather than merely a decline in demand. In marked contrast, several OPEC members have seemingly become unwilling to cut production and lose market share as higher cost producers are largely responsible for the production growth. 19 Several analysts have argued that since the decline was caused by excess supply, the current oil price curve will follow a U-shape recovery, meaning we will see a longer period of

low oil prices than in the previous correction and then a return to much higher prices again.

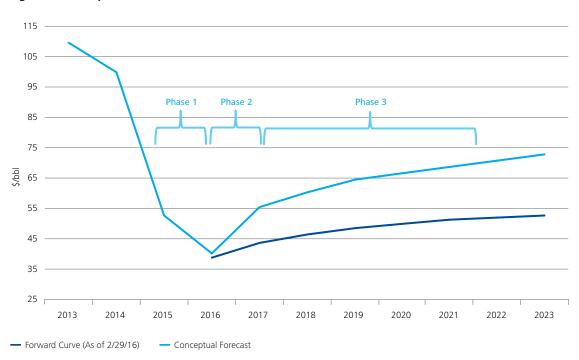
Considering today's price environment with many sources of crude oil at or near their "cash cost" or variable lifting cost level, one could argue that a sustained period of low prices can't continue for long unless future demand becomes materially weaker than we expect. The current oil futures market appears to represent this view as February 29, 2016, settlements (Figure 10, page 14) show prices in contango, which then flatten to a steady level of \$50/bbl by 2020 and remain there for several more years. Conversely, this paper highlights that by 2018 the supply-demand balance will tighten more, driving our Reference Case view that prices will eventually rise more quickly.



Taking a closer look at the fundamentals of oil economics and the scenario put forth in this paper, we postulate the price recovery shape could differ somewhat from what the current forward curve portrays. Figure 10 also shows a conceptual oil price outlook following a "checkmark" recovery. This curve represents the switching from current low prices (Phase 1) (near cash-cost levels) to a rapid step-up (Phase 2), which boosts prices more rapidly, but not to the levels seen pre-crisis as efficiencies have increased and production costs have been

reduced. We enter Phase 3 as increases in higher cost elastic supply are needed to keep up with production decline and demand growth. Our analysis indicates prices could continue to gradually rise thereafter, caused by demand growth and existing production declines creating a steady contango. Given the current market data, we expect this contango to occur beyond the five-year horizon, but this is dependent on many factors.

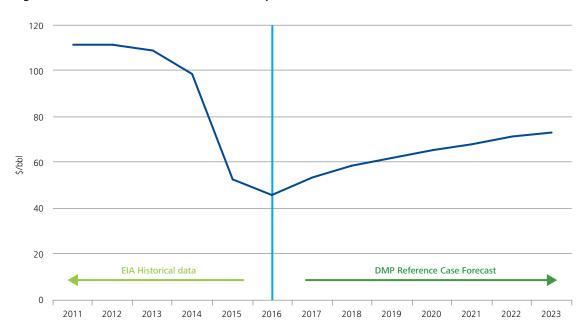
Figure 10. Conceptual forecast vs. forward curve



Source: Deloitte MarketPoint Source: EIA, Historical pricing data Deloitte MarketPoint's Reference Case price forecast for the next five years (Figure 11) more resembles the "checkmark" recovery. We expect a step up in prices from the mid \$40s in 2016 to around \$58/bbl in 2018 in response to the future supply-demand balance. Given the efficiencies gained, technological advances, and service cost reductions achieved, US tight oil production should return to some level of pre-crisis growth at these higher price levels. This shores up the production shortfall in 2018, but the larger shortfall

expected in 2019 (see Figure 9, page 12) will need to be resolved by additional investment and production from Iran, Iraq, Brazil, and possibly Russia, and potentially even more growth in US tight oil. Beyond 2019, we expect steady price growth to support ever-increasing production requirements from more expensive sources such as offshore, oil sands, and costlier tight oil projects. This could be further impacted by rising service industry cost due to increased utilization.

Figure 11. Deloitte MarketPoint Reference Case price forecast



Note: Forecasted inflation averages 2% based on Deloitte University Press U.S. Economic Forecast, Volume 3 Issue 4, December 2015

Source: Deloitte MarketPoint Source: EIA, Historical pricing data

Conclusion

While current crude prices reflect a dire situation for much of the industry, sizeable capital and operating budget cuts over the last year are going to leave a lasting impact. Based on our analysis, we could see a supply shortfall of over 1 million b/d as early as 2018 based on delayed investments and factoring in investment carryovers and excess storage drawdowns. This shortfall should generate a much needed price increase to around \$58/bbl, but not the return of \$100+/bbl oil in the near term. Our analysis suggests sources such as the major US tight oil basins, Iran, Iraq, and possibly Russia could potentially cover the first two years of production shortfall at the \$58/bbl price range. Beyond 2019, continued demand growth and production declines will require further price increases to cover full-cycle costs for high-cost producers such as Canadian oil sands and deep water offshore sources.

The analysis in this paper represents only one of a vast number of possible scenarios. The exercise isn't meant to predict future prices and flows but more to discuss the impact future fundamentals could have on prices. Deloitte MarketPoint advocates the development of numerous scenarios based on quantitative analysis to develop a range of potential outcomes that can help strategic planning teams develop robust business plans.

This shortfall should generate a much needed price increase to around \$58/bbl, but not the return of \$100+/bbl oil in the near term.



Endnotes

- 1 "Oil Prices in Crisis: Considerations and Implications for the Oil and Gas Industry," Deloitte Development LLC, February 4, 2015, http://www2.deloitte.com/us/en/pages/energy-and-resources/articles/oil-prices-in-crisis.html.
- ² MarketBuilder is Deloitte MarketPoint's proprietary Generalized Equilibrium modeling software. For this study we utilized MarketBuilder to produce the Q1 2016 World Oil Reference Case outlook for oil markets.
- ³ EIA, Short Term Energy Outlook, February 2016.
- ⁴ IEA, 2014 Medium-Term Oil Market Report.
- ⁵ Various public news releases and company websites.
- ⁶ IEA, Oil Market Report, January 2016.
- 7 Ibid.
- 8 Ibid.
- 9 Ibid.
- ¹⁰ CNBC, OPEC Member: Production Freeze, \$50 Oil is Coming, February 27, 2016.
- ¹¹ IEA, Oil Market Report, December 2015.
- ¹² EIA, November 2015 production data (released in January 2016).
- ¹⁴ EIA, Drilling Productivity Report, January 2016.
- 15 Ibid.
- 16 Mike Cantrell, chairman of the Oklahoma City-based National Stripper Well Association, https://nswa.us/custom/shownews.php?action=detail &id=711&page=1.
- ¹⁷ IEA, World Energy Outlook, 2013.
- ¹⁸ EIA, Short Term Energy Outlook, February 2016.
- ¹⁹ Beginning in 2015, OPEC also increased its production by approximately 1 million b/d.

Let's talk

Authors



George GivenDeloitte MarketPoint Advisory Leader
Deloitte MarketPoint LLC
+1 713 982 3435
ggiven@deloitte.com



Jeff Suchadoll
Senior Manager, Crude and Refined Products
Deloitte MarketPoint LLC
+1 713 982 4316
jsuchadoll@deloitte.com



We want your feedback

In an effort to capture your feedback, so we can continue to provide you with the most relevant and valuable publication material, we have created this brief survey to better understand your needs. Thank you for your participation.

www.deloitte.com/us/er-tl/survey

Deloitte Center for Energy Solutions

The Deloitte Center for Energy Solutions (the "Center") provides a forum for innovation, thought leadership, groundbreaking research, and industry collaboration to help companies solve the most complex energy challenges.

Through the Center, Deloitte's Energy & Resources group leads the debate on critical topics on the minds of executives—from the impact of legislative and regulatory policy, to operational efficiency, to sustainable and profitable growth. We provide comprehensive solutions through a global network of specialists and thought leaders.

With locations in Houston and Washington, DC, the Center offers interaction through seminars, roundtables, and other forms of engagement where established and growing companies can come together to learn, discuss, and debate.

www.deloitte.com/us/energysolutions



Deloitte MarketPoint.

Deloitte MarketPoint enables its clients to better understand energy and commodity markets by providing fundamental energy market models and analysis. We utilize the Deloitte MarketBuilder software solution for energy and commodity markets which consider short- to long-term planning horizons. Our MarketPoint solution line-up includes specifically configured MarketBuilder solutions for the global gas, world oil and North American power and gas.

www. deloit temark etpoint.com

This publication contains general information only and is based on the experiences and research of Deloitte practitioners. Deloitte is not, by means of this publication, rendering business, financial, investment, or other professional advice or services. This publication is not a substitute for such professional advice or services, nor should it be used as a basis for any decision or action that may affect your business. Before making any decision or taking any action that may affect your business, you should consult a qualified professional advisor. Deloitte shall not be responsible for any loss sustained by any person who relies on this publication.

About Deloitte

Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee ("DTTL"), its network of member firms, and their related entities. DTTL and each of its member firms are legally separate and independent entities. DTTL (also referred to as "Deloitte Global") does not provide services to clients. Please see www.deloitte.com/about for a detailed description of DTTL and its member firms. Please see www. deloitte.com/us/about for a detailed description of the legal structure of Deloitte LLP and its subsidiaries. Certain services may not be available to attest clients under the rules and regulations of public accounting.

Copyright © 2016 Deloitte Development LLC. All rights reserved. Member of Deloitte Touche Tohmatsu Limited