



THE NEW BALANCE OF POWER IN OIL

FRACKERS ARE CHALLENGING
TRADITIONAL SWING PRODUCERS

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Abdalla Salem el-Badri, secretary general of the Organization of Petroleum Exporting Countries (OPEC), said in April 2015 that the cartel's decision to continue to pump oil in spite of collapsing prices is inflicting pain on United States shale producers. Six months later in its September monthly oil-market report, OPEC wrote: "All eyes are on how quickly US [oil] production falls."

North American oil producers are experiencing widespread pain as a result of rock-bottom oil prices. One after another, US-based independent oil producers such as EOG Resources Inc., Carrizo Oil & Gas Inc., Rosetta Resources (now part of Noble Energy) and Whiting Petroleum Corp. have reported missed-earnings estimates and plans to cut production.

Many may need to contract even further. Banks re-examining their portfolios may charge them higher interest rates if shale producers' credit ratings are downgraded, which will lower their cash flows. In addition, the recent hemorrhaging of talent and equipment at oil field services companies could make it more difficult for North American shale producers to "turn on" additional drilling and pressure pumping. Consider: At present, they have only half as many rigs at their disposal as they did in 2014.

But it's way too early to count US-based shale producers out as major players in the oil markets in the future. Rather, what's happening marks an historic shift in the companies acting as market-driven swing producers by reacting swiftly to falling prices.

AN HISTORIC SHIFT

Over the past six years, "tight" oil, also known as shale oil, has soared from about 10 percent of total US crude oil production to approximately 50 percent. That means the US oil industry is producing roughly 4 million more barrels of crude oil every day than it did

in 2008, according to the Energy Information Administration (EIA).

As a result, the gap is closing between US crude oil production and the world's other two top producing countries, Russia and Saudi Arabia. From 2009 to 2014, Russia grew its production from 9.5 million barrels per day to 10.1 million, while Saudi Arabia expanded its production from 8.2 million to 9.7 million barrels per day. Meanwhile, US daily oil production soared by more than 60 percent, from 5.4 million barrels per day to 8.7 million barrels. Together, these three top producers now account for almost 37 percent of the world's total crude oil production. (See Exhibit 1.)

The EIA expects the new status quo to continue. In the first six months of 2015, US monthly crude oil production ranged from a high in April of 9.6 million barrels per day to 9.3 million barrels per day in June of 2015. The agency believes that US production will average 9.2 million barrels per day in 2015 and fall to 8.8 million barrels per day in 2016 assuming the "lower for longer" pricing environment continues.

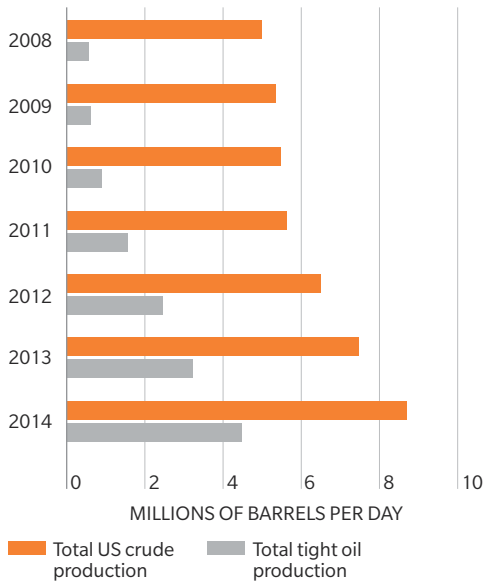
STRONGER RESILIENCE

The main reason that shale producers are proving to be resilient is that they have continuously improved their drilling and fracturing technology, increasing their drilling efficiencies and stretching their capital expenditures. Our research shows that over the past three years alone, many American shale producers have cut their unconventional oil drilling and completion costs by 15 percent to 25 percent on average. In fact, North American shale producers are already working toward reducing their break-even point by as much as half. A lower break-even point could put shale on par with the oil fields of many national oil companies.

Many North American shale producers have also exercised much greater discipline in

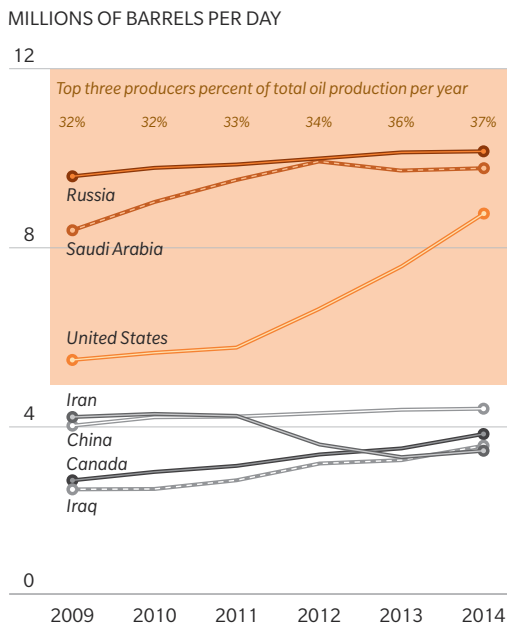
EXHIBIT 1: THE DRAMATIC RISE OF AMERICAN OIL

Greater amounts of shale oil are boosting crude oil production in the United States...



Source: EIA, Oliver Wyman analysis

... putting it on par with the world's other top producers, Russia and Saudi Arabia



Source: EIA, Oliver Wyman analysis

managing operating expenses, recalibrating oil drilling activity with cash flows and planning for the “lower for longer” oil-pricing environment. Leaders in the industry have developed vast portfolios of operations, which enable them to cut back on drilling in high-cost areas while ramping up their drilling in lower-cost fields. They have also hedged portions of their production at much higher prices so that they can still make a financial profit even when their variable costs exceed the market price.

By contrast, the cost of drilling oil in the Middle East is starting to climb. To maintain or improve production from maturing fields, Middle Eastern national oil companies will need to adopt enhanced recovery methods using more expensive technologies. They also will have to consider tapping into new reservoirs and fields, many of which are of a lower quality. It will likely cost more to produce a barrel of oil from these sourer, heavier and tighter supplies.

So in effect, as OPEC acts less like a traditional “swing producer,” North American shale producers are stepping into the role. Since 1973, Saudi Arabia and other OPEC members have acted as swing producers by increasing or reducing their oil output to help the global market adjust to shortages or surpluses in supply and volatile prices. North American shale producers are now responding to market supply and price changes.

Although some producers are unable to financially withstand the continued “lower for longer” oil price environment, most unconventional producers are proactively adjusting their production and cost profiles until prices rebound to more desirable levels. By allowing their producing shale fields to deplete naturally and curtailing drilling of new development wells, they are slashing their production in response to oversupply and low prices. But once supply tightens and the price of oil recovers, North American shale producers can quickly ramp up production in a matter of months, rather than years,

EXHIBIT 2: THE GLOBAL RISE OF SHALE PRODUCTION

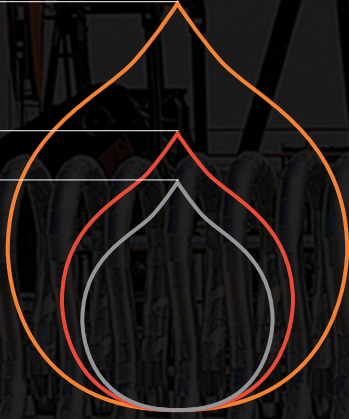
North American shale producers are becoming more efficient...

SPOT WTI CRUDE OIL PRICE

JUN 2014
\$103

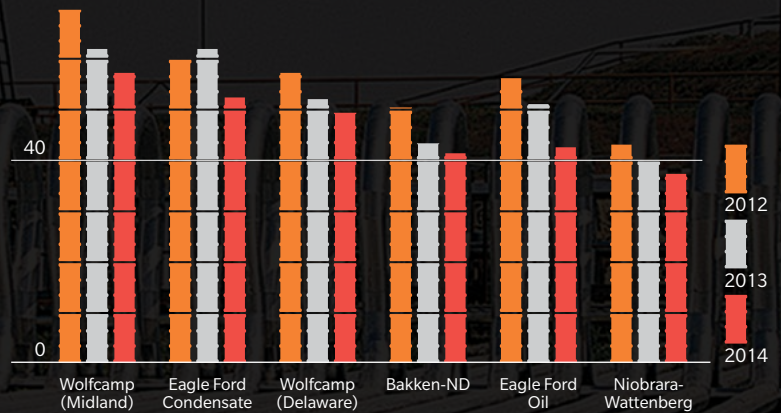
DEC 2014
\$69

JUN 2015
\$58



US SHALE BREAK-EVEN COSTS, \$ PER BARREL OF OIL EQUIVALENT

80

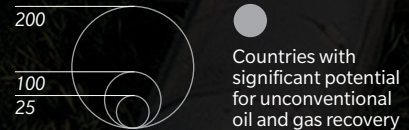


... serving as a blueprint for more potential shale production worldwide

TECHNICALLY RECOVERABLE UNCONVENTIONAL OIL AND GAS RESOURCES
IN BILLIONS OF BARRELS OF OIL EQUIVALENT, 2013



1,241 Unconventional gas
345 Unconventional oil
1,586 Total billions of barrels of oil equivalent



*The Kingdom of Saudi Arabia has more than 6 trillion cubic square feet of unconventional oil and gas resources, according to oil field services companies operating there.
Source: EIA, NDIC, IEA, ConocoPhillips investor presentation, Oliver Wyman analysis

by deploying currently demobilized rigs in factory-mode drilling.

EXPANDING RANKS

Within the next decade, more unconventional oil and gas producers may also join existing players' ranks. Shortages in rapidly growing regions such as Asia and Africa are likely to be further exacerbated by a rising number of countries taking unilateral action to cope with local scarcities. And the US has shown one relatively inexpensive and fast way for countries to seek energy independence is by exploiting their own unconventional oil and gas resources.

Until now, the US has dominated the unconventional oil and gas market in large part because its players have better access to cheap capital, stronger mineral rights laws, availability of water for fracking, and an entrepreneurial, market-driven supply-chain ecosystem. So far, no other country has been able to replicate these conditions successfully. But in time, countries such as Argentina, Russia and China could figure out how to improve their environments for unconventional oil and gas drilling – potentially resulting in more regionalized oil markets in the long term. The estimated 156 billion barrels of oil equivalent unconventional resources in the US are only a small fraction of the approximately 1.6 trillion barrels of unconventional oil and gas that exist worldwide. (See Exhibit 2.)

So what steps should governments, national oil companies and oil majors take to stay ahead of these shifts? Most are tightening their belts to survive currently low oil prices by eliminating less valuable capital expenditures, renegotiating supplier contracts and reconsidering stock buybacks and dividend payouts, which have exceeded the oil majors' cash flows in recent years. Some are also opportunistically revamping their portfolios of businesses, workforces, supply chains and risk management practices.

BECOMING NIMBLE

While these are practical short-term steps, the answer to sustaining performance in a lower oil price environment is to be nimble, flexible and efficient in responding to supply-demand dynamics. To come out on top, governments and companies should take advantage of market distress while they can by rebalancing their resources to better meet shifting domestic and overseas demand and supply dynamics before the economic cycle reverses.

Governments in the Middle East, especially, should learn from the processes, organization, supply chains and other capabilities developed by North American shale players. They need to improve their ability to deploy capital in initiatives that will maximize their localization by creating more jobs, while expanding their range of substitutes for energy imports and potential exports. They should pick up the acreage, technology, talent and capabilities they need to compete in an oil market made up of many more nimble shale producers.

Frackers are showing that a new, more market-driven, invisible hand is not influencing oil prices but, rather, being driven by them.

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