

THE NEWSLETTER OF THE BDO NATURAL RESOURCES PRACTICE

NATURAL RESOURCES RECORD



EFFECTS OF THE NATURAL GAS BOOM IN FOCUS AT CERAWEEK 2014

By Charles Dewhurst

Booming natural gas production fueled the conversation at this year's CERAWEEK conference, with speakers and attendees weighing the economic and geopolitical effects of abundant supply in the U.S. against the backdrop of escalating developments in Ukraine and Russia. Optimism around growth opportunities was clearly evident but remained tempered by U.S. policy and infrastructure challenges that inhibit greater profitability. Conversations largely centered on:

Making the Economics of Surging Shale Production Work

As shale production in the United States matures, excitement is growing surrounding the potential of liquefied natural gas (LNG)

exports. A March report by consulting firm IHS revealed the country is set to become one of the world's top three major LNG exporters by 2020-2022. In his keynote address, U.S. Energy Secretary Ernest Moniz voiced confidence that the government would grant more LNG export licenses to companies as the United States looks to position itself as a global energy supplier. The current global market for natural gas is somewhat limited, with a small number of suppliers in the game. This creates substantial price differentials among countries (particularly those in Europe and Asia) wherein U.S. producers can make a fair profit selling LNG to resource-hungry countries.

► DID YOU KNOW...

The *New York Times* reports the United States would import more than 10 billion cubic feet of natural gas a day if the shale boom never occurred; however, the country is now positioned to export that amount as liquefied natural gas by 2020.

American refiners are set to add at least 400,000 barrels of oil-refining capacity per day to existing plants until 2018, according to information compiled by the *Wall Street Journal* and consulting firm *IHS*.

By 2022, 60 percent of North American dry gas will come from shale, according to an analysis by *Ziff Energy*.

Exxon Mobil predicts natural gas will outpace all energy sources by 2040, increasing by 65 percent, with Asia leading in consumption.

At this time, there are 24 pending applications to export liquefied natural gas (LNG) from the United States, says the *U.S. Department of Energy*.

The *U.S. Energy Information Administration* reports European countries import 76 percent of Russia's natural gas exports and 84 percent of its oil exports.

The *International Energy Agency's* most recent *World Energy Outlook* indicates that conventional grid extension is viable for urban areas and only about 30 percent of rural areas, which leaves 70 percent of rural areas in need of mini-grid or off-grid solutions to access energy.

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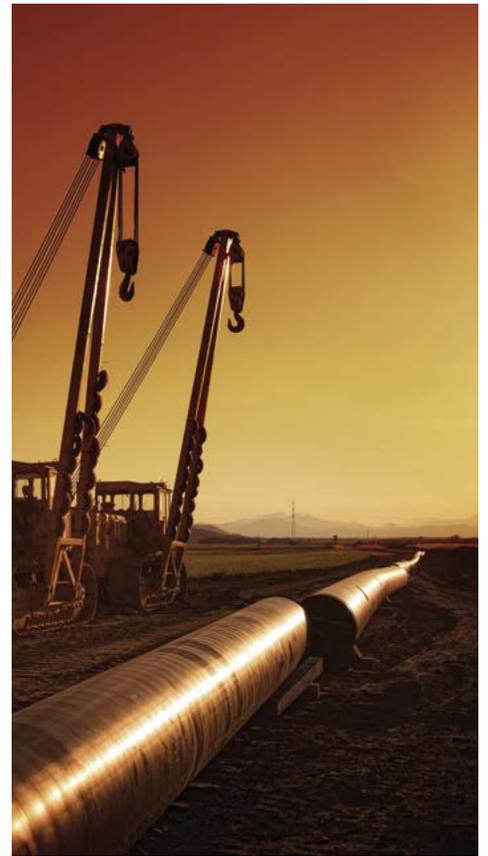
Domestically, the United States has also benefited from the inexpensive production of natural gas. The low domestic pricing has helped drive a renaissance in the U.S. manufacturing industry, particularly in plastics and steel, in turn spurring job creation. Furthermore, natural gas has begun to replace coal as feedstock for both industry activities and consumer electricity generation. Combined with ongoing developments in alternative energy, natural gas is helping the industry reduce greenhouse gas emissions.

Another prominent effect of the shale boom has been positioning U.S. energy as a strategic asset instead of a strategic liability. Shale oil and gas have not only reduced U.S. dependence on foreign sources of energy; they have also allowed the United States

to play a major role in shaping the global industry. Though ongoing unrest in the Middle East has shut in 3 million barrels of global oil production per day, shale production in the United States has been able to offset this effect on a one-to-one basis. This has helped contribute to a relatively stable global oil price over the past two years, which has been a boon to both the United States and its trade partners. While price volatility may be a perennial concern for oil companies worldwide, the growing prominence of the United States and other non-OPEC countries in the global oil industry is helping to mitigate some of these fears and create a more reliable international energy market.

Despite this positivity, obstacles to growth persist. Expanding the United States' pipeline infrastructure is crucial to accommodating ongoing production and to bringing resources to market. For example, the industry is still working to maximize its ability to carry resources from the Marcellus shale to urban outposts in the Northeast, and it continues to use a disjointed network of rail, truck and pipeline transport to carry oil and gas from the Bakken shale to the Texas Gulf Coast refinery complex. In a study released by ICF International, a management, technology and policy consulting firm, analysts project that \$14.2 billion per year will be required through 2035 to accommodate gas supplies and connect new shale plays with current infrastructure and future facilities. An extensive, connected pipeline network in the United States will not only help move resources more efficiently, it will also reduce many of the safety hazards posed by rail or truck transportation, such as spills and accidents.

An additional obstacle will be keeping up with changing global dynamics to maintain a competitive edge. Specifically, the United States is unlikely to develop a meaningful LNG export capability before 2020, as LNG refining facilities are extremely capital intensive and require highly engineered structures with long construction periods and arduous permit processes. The global market could change during that time — especially if other countries are able to replicate the United States' success with nonconventional resources — and natural gas price differentials may narrow between the United States and



key foreign customers, making LNG export endeavors less profitable. The industry will need to carefully monitor global energy dynamics and remain nimble to address shifts in the market over the next half decade if LNG exports are to remain a viable endeavor.

Geopolitical Events Wield Significant Influence

With resources in abundant supply, the United States has a strategic opportunity to provide its global trade partners with an inexpensive, reliable supply of energy. This may be important now more than ever as European countries seek to offset their current dependence on Russia's oil and gas industry—which has historically proven both expensive and extremely sensitive to geopolitical developments. Currently, Russia is the dominant supplier of natural gas to the broader European market, with 53 percent of all Russian gas exports to Europe passing through Ukraine. The Energy Information Administration reports that European countries import 76 percent of Russia's natural gas exports and 84 percent of its oil exports. Europe is very much in need of alternatives to Russian oil and gas in order to provide ongoing

Keystone Pipeline Remains a Question Mark

The Keystone XL Pipeline debate surfaced in presentations this year, but was more muted than in years past. Environmental groups continue to express concern about pollution, carbon emissions and broader ecosystem disruptions, while proponents of the pipeline continue to argue that the pipeline will improve oil transit across North America, deepen ties with Canada's oil industry and create jobs. TransCanada CEO Russ Girling expressed certainty that President Obama would approve the project in the near future, and with tight oil production rapidly increasing, Canada has already begun work on its domestic portion of the pipeline. However, the ongoing politicization of the pipeline in the United States has created a contentious environment, and it seems that the Obama administration may continue to delay a final decision until the debate cools.

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energy security and to avoid economic upheaval in the face of international crises, including the current conflict in Ukraine.

As political unrest in Ukraine unfolded during this year's conference, Energy Secretary Moniz addressed the tenuous situation head-on, noting that the circumstances provided a compelling justification to hasten the process for LNG terminal permits. Appearing before the House Foreign Affairs Committee on March 13, Secretary of State John Kerry affirmed this notion, saying the Obama administration is in favor of exporting LNG to Ukraine to aid in reducing its energy dependence on Russia.

Shale Boom Replication: A Reality Check around the Globe

Numerous countries are looking to replicate the United States' shale boom on their home turf. At the forefront of this wave is China, a country that sees natural gas as a way to reduce its heavy dependence on coal and to satisfy burgeoning domestic demand. In the Western Hemisphere, Argentina is looking for sources of foreign currency to meet its debt needs, and pushing natural gas development could help attract foreign investment and drive revenues.

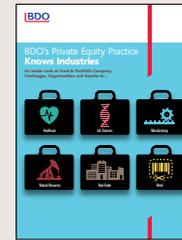
However, the stress of infrastructure investments, resource constraints, environmental concerns, political roadblocks

and the risk of financial losses all present obstacles to these countries as they look to capitalize on their shale resources. As they and other countries enter the unfamiliar territory of shale production, American engineering firms are poised to sell their experience and knowledge to fledgling producers. But each shale formation varies in its geology and requires test exploration to determine which technologies work best, and it is unclear whether countries will be able to afford the investment or if U.S. engineers will have the requisite knowledge and expertise in all instances. Despite this growing global curiosity, it is clear that shale development outside North America is still in its infancy.

Overall, this year's CERAWeek continued the theme of last year's conference: Though there is great optimism in the U.S. energy sector, the industry remains aware of the very real challenges facing future growth. As shale production continues in the United States, all stakeholders must come together to address these issues in order to promote the continued profitability of U.S. energy production and its benefits for the U.S. economy and consumers alike.

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BDO'S PRIVATE EQUITY PRACTICE KNOWS INDUSTRIES eBook



In uncertain times, it's more important than ever that private equity fund managers

engage partners who understand their industry and the industries in which they invest. In the natural resources industry, fund managers need advisors who recognize the challenges they face when sourcing and closing deals, growing their portfolio companies and, ultimately, exiting their investments. BDO's integrated, multi-disciplinary teams support private equity funds and their portfolio companies across the globe and in more than 15 industries with a full spectrum of professional services.

This eBook offers an inside look at how [BDO's Private Equity practice](#) has worked with funds and portfolio companies across a number of industries, including: natural resources, healthcare, life sciences, manufacturing, real estate and retail.

Download the eBook here: www.bdo.com/download/3104.

Eliminating Energy Poverty

Many of this year's conference speakers expressed the need for the industry to address energy poverty in the developing world. The International Energy Agency's most recent [World Energy Outlook](#) estimates that 18 percent of the global population did not have access to electricity in 2011. A lack of reliable energy ultimately inhibits a country's economic progress and interferes with its ability to provide essential services like nutrition, education and sanitization, among others.

Tighter global loan practices following the 2008 debt crisis have limited access to capital for many developing countries looking to shore up their domestic industries or to import resources. Moreover, political corruption, piracy and international conflict continue to severely limit the development and stability of their energy markets. The solution to this pressing issue remains a combination of both domestic and international initiatives: Developing countries must address the systemic corruption issues that hinder foreign investment, while the global community must identify opportunities for investment and support for nascent energy industries.

BDO SPOTLIGHT:

Executive Q&A with Lorraine Walker, BDO Canada

How did you become interested in your career, especially your work in the oil & gas industry?

My career in oil and gas began more than 20 years ago. While my original aspiration was to become an archaeologist, I developed some bookkeeping experience throughout high school and eventually put myself through university by working full-time at an accounting firm. Throughout the years, I gained experience with a variety of firms, and my knowledge of the oil and gas industry continued to grow. I eventually joined BDO Canada, where I've served not only as the Calgary office leader, but also as one of the firm's national energy leaders. The natural

resources industry is extremely important to Canada and, to this day, the sector engages my interests so much so that I've enrolled in university courses entirely unrelated to accounting but specific to the oil and gas industry. I strongly believe you cannot be a successful industry leader without knowing it holistically.

What do you see as the biggest challenges facing the natural resources industry today?

Balancing environmental concerns with the need to get product to market—both domestically and internationally—remains



a big issue for the industry. The industry needs to build up its infrastructure in order to capitalize on the global momentum surrounding the LNG boom. Moreover, these infrastructure projects are not only capital intensive, they also present geographical challenges, since much of Canada's resources do not have ready access to ports of export. More generally, regulatory and legislative developments continue to affect the oil and gas sector, and laws are often slow to pass.

PErerspective in Natural Resources



As the United States continues to produce near-record quantities of oil and natural gas, a shortage of much-needed midstream infrastructure—such as gathering, processing, storage and LNG facilities, as well as pipelines needed to deliver resources to market—has prompted a wave of private capital investment.

Master limited partnerships (MLPs), publicly traded investment vehicles that have invested in the energy landscape over the past several years, now attract billions of dollars in capital commitments from private equity firms for investment in midstream infrastructure projects, according to CNBC.

Such relationships are mutually beneficial. The influx of private equity capital has fueled rapid growth in the once-sleepy MLP industry. From the private equity perspective, midstream infrastructure is an attractive investment, as it is less vulnerable to commodity price fluctuations: Pipeline operators are compensated based on the amount of oil or gas they transport, not the value of the commodity itself. Additionally, such investments typically generate long-term and predictable cash

flows based on long-standing contracts with providers and government-regulated rates of return. Private equity firms with U.S.-based investors also benefit from MLPs' tax-friendly structure.

Building midstream infrastructure is not without risks, however. Energy projects require significant capital upfront. For example, the 680-mile Ruby Pipeline, which delivers natural gas from the Rocky Mountains to West Coast consumers, cost more than \$3.5 billion to complete, according to the *Wall Street Journal*. These projects also may run into political resistance and environmental concerns; most recently, court challenges and environmental lawsuits have helped stall the Obama administration's final decision on the Keystone XL Pipeline.

That said, private equity firms are continuing to make investments in the construction of infrastructure for the U.S. oil and gas industry, which they foresee as the next stage of greater U.S. energy independence.

PErerspective in Natural Resources is a feature examining the role of private equity in the natural resources industry.

The oil and gas sector also faces a sustained shortage of skilled labor. Finding skilled trade laborers, engineers and scientists remains a top priority and is essential to successfully moving the industry forward. In fact, many Canadian companies have begun to import labor to fulfill their needs. Meanwhile, Canadian universities and trade schools are expanding their offerings in programs geared toward attracting more skilled talent to support labor demand while grooming the next generation of oil and gas leaders. Yet these programs may take time to gain traction, and there is an immediate need to boost sector employment numbers.

A third challenge is combating the vast underrepresentation of women in Canada's natural resources industry, which currently only comprises about 18 percent of the total workforce. There's been a domestic push to embrace their potential for the sector by getting more women involved as executives, trades people, geologists, scientists and engineers. In February, the Canadian government announced support of a project aimed at enhancing women's participation in Alberta's oil and gas sector, which would create a more inclusive and supportive employment environment.

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BDO SPOTLIGHT

What are some of the biggest growth opportunities in the industry?

In addition to the ongoing productivity of the oil sands, the labor required to continue their development gives the industry an opportunity to attract a new generation of worker. Companies that round out their workforces with young talent focused on environmental responsibility and innovation can help the industry align itself with environmental protection initiatives and go beyond compliance measures.

In addition, the North American oil and gas boom also highlights the potential for advancements in employee health and safety. As labor requirements increase from upstream to downstream, there is a unique opportunity for the industry to strengthen its efforts surrounding employee health and safety. While continuing safety discussions are vital to ensuring all vested parties understand equipment functions and realize workplace hazards, stronger actions can be taken. The industry can improve oversight to ensure workers are operating in an alcohol- and drug-free environment, as well as expand accident reporting requirements to help maintain accountability. By implementing practices that, most importantly, protect workers' lives, companies also protect their bottom lines and increase production.

How would you characterize the impact of the work you do?

We have a leverage model that differs from other market offerings. Our partners spend significant time interfacing with clients and building BDO's knowledge of their business, industry and the challenges they face to help provide better, customized support. We create and foster these associations so that clients see us as trusted advisors they can consult before relatively small issues balloon into problems. From our knowledge of their business, we can help them realize their goals as a company and pursue their growth objectives. We've broadened our focus from the auditing and tax aspects of our clients' business to offer a full suite of services that expand our role as a dependable business advisor.

What lies ahead for BDO Canada's Natural Resources practice?

As we solidify our relationships within the province of Alberta and other BDO offices across North America, we are enhancing our position as a cross-border services provider. Through collaboration with BDO USA, we will continue to coordinate and synergize our respective knowledge bases and resources. Leaders with BDO's International Natural Resources Group recognize this sector is a key industry to develop as they work to expand the firm's offerings and recruit talent equipped to provide options for multinational clients.

As the industry grows, the Natural Resources practice is positioned to serve as a knowledge resource for the sector, from exploration

and production companies to their service providers. We've expanded our involvement across the sector's professional associations, including those organizations focused on oilfield services. In cultivating our relationships with industry decision-makers and leaders, we look forward to building customizable recommendations for our clients during this exciting time.

Lorraine Walker is Partner and Oil & Gas leader with BDO Canada, LLP. She can be reached at walker@bdo.ca.



MARK YOUR CALENDARS

The following is a list of upcoming conferences and seminars of interest for natural resources executives:

JUNE 2014

June 9-10

Energy Capital Conference

Omni Houston Hotel
Houston, Texas

June 14-15

2014 EIA Energy Conference

JW Marriott
Washington, D.C.

June 15-18

37th IAEE International Conference

New Yorker Hotel
New York, N.Y.

June 25-26

REFF-Wall Street Renewable Energy Finance Forum

Grand Hyatt New York
New York, N.Y.

JULY 2014

July 1-2

AMEC Convention

Crown Perth
Burswood, Western Australia

July 21-23

Shale Energy Engineering Conference

David L. Lawrence Convention Center
Pittsburgh, Pa.

July 27-31

IEEE Power & Energy Society General Meeting 2014

Gaylord National Resort & Convention Center
National Harbor, Md.

AUGUST 2014

August 17-21

The Oil and Gas Conference

Westin Denver Downtown Hotel
Denver, Colo.

August 20-22

Summer NAPE Expo*

George R. Brown Convention Center
Houston, Texas

August 25-27

Unconventional Resources Technology Conference

Colorado Convention Center
Denver, Colo.

* Indicates that BDO representatives will be present at conference.

For more information on BDO USA's service offerings to this industry, please contact one of the following regional practice leaders:

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BDO'S NATURAL RESOURCES INDUSTRY PRACTICE

BDO's Natural Resources industry practice provides assurance, tax and advisory services to emerging and established businesses in the United States and all over the world who are involved in both the traditional and alternative energy industries. Our clients often operate across borders either raising capital or making acquisitions abroad. Our extensive industry knowledge is supported by our international network of 1,264 offices in 144 countries, allowing us to provide a consistently high level of service wherever our clients do business.

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