



Whitepaper: Predictions for the Oil and Gas Industry in 2017

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2017 Predictions: What’s Next in the Oil and Gas Industry

With the start of 2017, and with a new president in office, there are many questions about what’s in store for the oil and gas market in 2017. We at Trellis Energy work closely with numerous natural gas and energy asset owners across the upstream, midstream and downstream sectors. This allows us to keep a finger on the pulse of the industry and gives us keen insight into the broader trends that are affecting the industry both now and in the future. Leveraging this knowledge, we have come up with five predictions for the oil and gas industry in 2017:

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Prediction 1: As a result of the new presidential administration, we can anticipate that policy positions may affect the natural gas industry in a number of ways, including:

Increased and ongoing exploration of natural resources in the United States of America

Under the previous presidential administration, policies that stopped public land development, curbed the exploration of oil, coal and gas, and promoted wind and solar power on public lands were implemented. The nominee for Secretary of the Interior, Ryan Zinke is currently a U.S. Representative from Montana's at-large congressional district. His role is influential as the Dept. of the Interior manages mining and grazing on large sections of the state – areas that the Congressman may look to open up for exploration and development if he is sworn in as Secretary.

Zinke is seen as somewhat of a nemesis by the League of Conservation Voters, receiving an approval rating of three out of 100. Interestingly, while Zinke's past voting record suggests some currently protected lands may be opened for exploration, he is at odds with many other Republicans when it comes to ceding Federal control of these lands. Regarding discussions about relinquishing these lands to the states or for selling them for exploration, Zinke has previously opposed these actions. We can anticipate further exploration, but it is likely to be under a contract with the government rather than purchase of those lands by companies or private owners.

Both new and resumed construction on a growing network of energy infrastructure, primarily in the form of expanded pipeline and transport operations.

The ongoing boom of natural gas exploration, production and exportation has been facilitated by an investment in the required infrastructure to transport this surge in supply. The US government is the single largest landowner in many of the states with natural gas deposits. With more than 2.4 million miles of pipe, the United States has the largest network of energy pipelines in the world. Interstate and intrastate natural gas pipelines make up the largest portion of that figure. This is anticipated to grow, particularly in conjunction with the likelihood of fewer restrictions on Federal land.

In addition, there will be a massive push to maximize the efficiency of existing operating pipeline through new, internet connected components and solutions. This solution will provide a more accurate, real-time understanding of molecule transfer and monitor of operations, reduce service calls and truck roles and proactively and automatically initiate maintenance and repair.

Potential deregulation on the operations and speculation of natural resources

Oklahoma Attorney General has been put forward as the administrations nominee for the Environmental Protection Agency (EPA). A close ally of the fossil fuel industry, Scott Pruitt has acted in the past to defend energy companies expanding natural gas production in Oklahoma from accusations of air pollution levied by Federal regulators. If he is confirmed as the new EPA chief, it is anticipated that he will seek to streamline exploration and production hurdles currently in place.

While business is likely to boom, this will put the most pressure on smaller pipeline asset owners as margins begin to thin. We believe that deregulation is likely to increase predatory recruitment for key employees and spur increased consolidation of asset owners as those with the largest bankrolls seek to maximize their profit margins.

Increased potential for wider, more rapid fluctuations in the global commodities markets

Given the preceding, we can see an ongoing, accelerated overall growth and drive for increased automation in the natural gas industry, both in the United States and internationally. This evolution in optimization and automation is likely to put greater pressure on the crude oil market. This may result in the potential for broader fluctuations in the commodity markets for crude barrel prices due to production changes or announcements by regional oil consortiums and intergovernmental agencies, such as OPEC. This also may cause rifts between regional producers that are not part of the cartel, particularly in Latin America. For example, Venezuela and Ecuador are OPEC members, but Colombia and Mexico are not.

Prediction 2: Cyber-attacks on critical energy infrastructure will significantly increase.

As the industry continues to modernize its operations systems, we're seeing growing adoption of open, web-based information systems as well as increased connectivity to the Industrial Internet of Things (IIoT) for mission-critical processes. With the distinction between information technology (IT) and operations technology (OT) continuing to blur, the sector is facing an increasing number of cyber security vulnerabilities.

In 2015, The Industrial Control Systems Cyber Emergency Response Team (ICS-CERT) responded to 295 cyber incidents, a 20 percent increase from 2014, in which there were 46 energy sector incidents. The digital security firm Tripwire commissioned a 2016 survey of 150 energy sector IT professionals which [found more](#) that 75 percent had experienced at least one successful cyber-attack in the past twelve month.

We believe these numbers will increase significantly in 2017, especially as the pace of digitization in the industry intensifies. Given that any threat to energy supply or infrastructure has the potential to not only disrupt our daily lives but also endanger them, operators and asset owners in the oil and gas industry will need to invest in highly specialized cyber security solutions to protect themselves against impending threats.

Prediction 3: The retirement boom will continue to intensify and smaller operators will be squeezed the most.

Like many industry sectors today, oil and gas companies are feeling the talent squeeze. In 2015, 50 percent of workers in the oil and gas industry [were eligible](#) for retirement. According to the [American Petroleum Institute](#), natural gas and petrochemical industries will need to hire close to 30,000 workers annually over the next two decades to replace departing and retiring employees.

As this widening skills gap continues to threaten business continuity for companies across the board, we predict that we'll see a rise in predatory recruitment. In turn, this will lead to higher salaries and ultimately, pressure on the bottom line.

While everyone is bound to feel the pressure of this trend, we believe that smaller operators and asset owners with limited resources are likely to feel squeezed the most. Therefore, to maintain margins, we expect to see more operators and asset owners turn towards automation of critical business processes.

Prediction 4: As North American gas markets continue to shift toward a just-in-time supply structure, we predict that the industry will see an increasing number of supply interruptions.

Growing LNG exports and increased demand for dispatchable electricity sources are changing the demand patterns in the U.S. natural gas industry. Throughout 2016 we saw the industry increasingly move away from storing large quantities of natural gas for season demand, and instead move toward a more just-in-time supply model. We expect to see this trend continue in 2017. As a result, we predict that there will be some "hiccups" or interruptions in supply due to shortfalls, late delivery or sudden changes in demand as the industry learns how to manage the just-in-time model. Because of these hiccups or interruptions, we also predict that the just-in-time model will lead to bidding wars in the short term, which will benefit the upstream players who can charge more for gas supply when the midstream and downstream players find themselves suddenly needing more supply to cover any shortfalls in their just-in-time delivery model.

To be successful in a new just-in-time model, natural gas storage operators will need to become more agile. They should look to adopt new technologies and software solutions that can help them automate wheeling, parking, loaning and pooling services. They will also need to increasingly automate the business processes involved, such as automatically calculating the cost of gas and margins based on future prices in real-time so they can buy and sell with real-time margin calculations and management.

Prediction 5: The ever-increasing number of sensors connected to the Industrial Internet of Things (IIoT) along natural gas pipelines will lead to information overload for many pipeline asset owners. Companies will need to turn to technology and software solutions to help them manage the huge volumes of data and derive actionable insights from it.

There are more than 305,000 miles of natural gas pipelines in the U.S. and each mile is increasingly connected to the IIoT through a wide variety of sensors that do everything from measuring pressure, flow rate and other factors, to listening for leaks. In fact, it's estimated that every 30,000 miles of natural gas pipeline generates 17 terabytes of data each day – more than entire printed collection of the Library of Congress!

As pipelines continue to be increasingly connected with many more sensors, we predict that asset owners will become overwhelmed by the volume of raw data being generated. We will see natural gas asset owners throughout the industry increasingly turn to cloud-based technology platforms and sophisticated software systems that leverage computer learning and automation to not only manage the volume of data but more importantly, derive the actionable insights needed to streamline processes, and reduce operational and maintenance costs.

About Trellis Energy

Trellis Energy is a leader in providing innovative software solutions that help energy companies better manage and operate their energy assets. Trellis Energy works with BP Pipeline, Chevron Pipeline, DTE Energy, Gaz Metro, NextEra Energy, ONE Gas, Pacific Gas & Electric and Tokyo Gas, among others. The company is headquartered in San Francisco and has offices in Houston, Denver and Washington D.C. Let Trellis Energy's innovative solutions help run your business. Smarter.

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