

Abstract: "The Petroleum Industry Resets - Perspectives on the Road Ahead"

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Global oil markets continue to be significantly oversupplied and US gas producers seek new markets to absorb surplus gas supplies. During first quarter 2015 there was room for hope that markets would rebalance by end of the year and that oil and gas prices would begin a gradual recovery. Unfortunately, multiple factors indicate that oversupplies and price pressure will remain well into 2016. Early November 2015 WTI oil price at around \$44.00 per barrel and spot gas price around \$2.30 per Mcf, both less than half their corresponding 2014 highs, may look like "good" prices for several months ahead. As a result, a fundamental restructuring of the oil and gas industry is underway as companies "reset" operations to be profitable in a lower price environment.

Predicting when oil markets will rebalance is tricky with multiple global factors –reduced demand growth, Saudi Arabia's decision to defend its market share and pending revival of Iran's production – putting the onus on US tight oil producers to reduce supplies. An IHS scenario indicates that an extended period of \$45 oil could drive sufficient reduction in US tight oil production to rebalance the oil market in mid-2016. It may take longer as cost reductions and performance enhancements introduced by producers have slowed the rate of projected US oil production declines. Unfortunately, natural gas is not in position to come to the rescue. At this writing, it looks like US 2015 gas storage levels will set a new all-time record of more than 4 Tcf on the cusp of a possible mild winter influenced by a strong "el niño" pattern. If this outlook prevails, sub-\$2.00 per Mcf gas prices could return during first half of 2016. All eyes will focus on the "mighty Marcellus" to understand future trends in gas supplies. What is the breakeven price for recent Marcellus wells that may produce 2.2 to 2.8 Bcf per 1000 lateral ft. at a cost of \$860M to \$1 MM per 1000 lateral ft?

Meanwhile, companies are taking meaningful actions to further reduce costs in response to the challenging 2016 outlook. Additional budget cuts, workforce reductions, rig cancellations, cost cutting initiatives, asset rationalization, heightened emphasis on capital discipline and standardization are all part of the industry reset. Hopefully, 2016 will not provide another "deja vu all over again" repeat of "staying alive in '85". Both oil and gas prices are expected to resume positive trends during the last half of 2016.

The long term outlook for oil and gas through 2040 also is positive. An IHS base case scenario projects that 2040 oil and gas consumption will be about 53.6% of total world energy consumption – about the same as today but relative to a 25% increase in total energy consumption. Bountiful US tight oil and shale gas resources will play an important role in meeting projected world energy demand. Trends will, of course, be impacted by fluctuations in the global economy and unpredictable turmoil in important producing countries. The long term outlook also will be challenged by increasing public clamor to dramatically reduce fossil fuels – especially "dirty" oil – and with only limited accommodation for natural gas as a "transition" fuel to renewable energy. Currently, there is no silver bullet in sight to levitate wind and solar to much more than 22% of global electric power generation (about 4% of total energy consumption) by 2040. But there is a huge gap in the public perception and realities about the magnitude of the undertaking to migrate to a cleaner energy future. The petroleum industry may be increasingly challenged to educate public and policy makers about the critical role of oil and gas in energy and climate change solutions.

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