

## Opportunity in Recovery: Experts Share Their Perspectives on the Energy Outlook

A panel of experts shared their thoughts on the energy outlook during a panel discussion sponsored by The Carlyle Group on February 14, 2017. Here are some excerpts.

**Chris Carter**  
Managing Partner,  
NGP Energy Capital  
Management

### On shale market trends:

“(R)ecovery has been a key theme, but instead of just price recovery it’s been the actual reserve recoveries on single wells in core basins. (There has been) improvement in drilling efficiencies, the time required to drill a horizontal well, and then huge technological shifts that increase single-well reserve recoveries. ...So between significantly lower costs and significantly improved single-well reserve recoveries, even at much lower commodities prices, in the core of the best basins we’ve seen single-well returns actually hold up.”

“It’s a classic case of a lot of oil companies in a low price environment were backed into a corner and had to find ways to be more efficient and to improve economics. The first thing that we saw was these horizontal wells that historically were one-mile laterals (were extended) to a mile and a half, in many cases two-mile laterals, and now benefit from the related economies of scale. But really the biggest thing that’s driven improvements in reserve

recoveries has been the frack methodology being applied and just the intensity of those fracks.”

### Why the intensity of activity in the Permian:

“It’s just very expansive at roughly 250 miles wide by 300 miles long across much of West Texas and Southeast New Mexico. ...And what’s really special about the Permian is you have stacked pays. So think of it in terms of five to seven separate and distinct producing zones that are stacked on top of each other that can each be developed through horizontal drilling. That’s really been the difference-maker in the Permian Basin... (and) it’s driven huge M&A volume: just since the summer of 2016 we’ve seen nearly \$40 billion of acquisitions in the Permian, and it’s been a big theme in private equity, as roughly \$20 billion of that activity has been exits from portfolio companies of ours and other private equity firms. So we believe that Permian activity that today is roughly 40 percent of the horizontal drilling in the United States will continue.”

### How do you make sense of a flat price curve?

“The question that academics have looked into and tried to answer is whether the futures curve is an unbiased and efficient predictor of future spot prices. And the answer resoundingly is no. And the reason, first, is that you have a number of factors that influence the futures price, you have a convenience yield to holding inventories, the ability to use oil, the ability to pledge oil as collateral, you have storage costs, of course, you have interest rates. So all those factors affect the futures curve. But secondly you have what I would refer to as the ‘provincialism of the immediate,’ the notion that the balance that exists today in the market is going

**Jason Thomas**  
Chief Economist &  
Director of Research,  
The Carlyle Group

to persist for some time to come. And as a result you have a futures strip that substantially understates volatility... the actual volatility of the spot crude is roughly 3

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to 3.5 times as great as the implied volatility in futures prices. (E)ffectively net investment rises very rapidly when prices are high and in fact it leads to too much investment, which plants the seeds for excess capacity in the future and price declines, and then you see the mirror image of that today, when low oil prices lead to too little net investment globally and that plants the seeds for future supply constraints that generate non-linear price increases. Of course knowing and predicting when those supply constraints will actually bind is anyone's guess but history teaches that they arrive sooner than many expect.”

**Marcel van Poecke**  
Head of International Energy, The Carlyle Group

the investor capital, private equity especially, it's exactly the other way around. So 90 percent of the capital is available for the U.S., 10 percent for international. And that was already before this (recent oil) price collapse. So less competition.

“What we are focusing on in this international market is obviously the investor-friendly countries, and there are of course investor-friendly areas like the North Sea, some investor-friendly West African countries, some in South America, and some in Southeast Asia. So there is clearly

much (greater) supply of deals than there is capital, so (a) very interesting area to invest in.”

### Broad themes:

“The big theme ... is recovery. The oil price today is about 75 percent higher than it was this time last year and we are coming out of a very severe downturn in the industry. I think the key thing to look at now is... in a way geopolitics has been surmounted, and this OPEC/non OPEC deal is historic and it's actually working, the compliance is over 90 percent compared to 60 percent compliance on OPEC deals going back in 2008. And so OPEC is back... and eyes are very much on U.S. producers and what the recovery rate will be. U.S. production has bottomed out and is starting up again, and it's a much more efficient industry than it was 2½ years ago.”

### Where does OPEC go from here?

“Already the big question is, after this agreement, what? Because this agreement is only a six-month agreement, and is it going to be rolled over or not, and you hear different things from different producers. I think you have to look at the demand side of the equation too. And it looks like this year demand will be higher than it's been, maybe as high as 1.6 million barrels a day, partly because of the recovery in the oil exporting countries, because the Middle East itself has been a center of demand growth. ... (P)eople are going to still have some degree of caution, because they don't know what happens when this agreement comes to an end and what the market will look like at that point. And there's still a lot of oil to drain out of the inventories.”

**Daniel Yergin**  
Vice Chairman of IHS Markit & Senior Advisor, The Carlyle Group

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1. PLS M&A Database; Baker Hughes rig count data as of 2/24/17
2. [Wall Street Journal, Feb. 13, 2017 "OPEC Data Show Members Complying With Pledged Oil-Production Cuts," by Kevin Baxter.](#)

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**Chris Carter** joined NGP in 2004 and serves as Managing Partner of the NGP funds. Mr. Carter chairs the Investment Committee and Monitoring Committee and is a member of NGP's Executive Committee. Mr. Carter oversees NGP's efforts in sourcing, structuring, executing and monitoring investments.

Previously, Mr. Carter was a summer Associate with McKinsey & Company. Mr. Carter was also an Analyst with Deutsche Bank's Energy Investment Banking group, where he focused on financing and merger and acquisition transactions in the oil and gas and oilfield services industries.

Mr. Carter received a B.B.A. and an M.P.A. in Accounting, *summa cum laude*, in 2002 from The University of Texas at Austin, where he was a member of the Business Honors Program. He received an M.B.A. in 2008 from Stanford University, where he graduated as an Arjay Miller Scholar.

**Jason Thomas** is a Managing Director and Director of Research at The Carlyle Group, focusing on economic and statistical analysis of the Carlyle portfolio, asset prices, and broader trends in the global economy. Mr. Thomas is based in Washington, D.C.

Mr. Thomas serves as the economic adviser to the firm's corporate private equity and real estate investment committees. Mr. Thomas' research helps to identify new investment opportunities, advance strategic initiatives and corporate development, and support Carlyle investors.

Previous to joining Carlyle, Mr. Thomas was Vice President, Research at the Private Equity Council. Prior to that, he served on the White House staff as Special Assistant to the President and Director for Policy Development at the National Economic Council. In this capacity, Mr. Thomas served as the primary adviser to the President for public finance.

Mr. Thomas received a B.A. from Claremont McKenna College and an M.S. and Ph.D. in finance from George Washington University where he studied as a Bank of America Foundation, Leo and Lillian Goodwin Foundation, and School of Business Fellow.

Mr. Thomas has earned the Chartered Financial Analyst (CFA) designation and is a financial risk manager (FRM) certified by the Global Association of Risk Professionals.

**Marcel van Poecke** is a Managing Director for Carlyle International Energy Partners (CIEP) and is the Head of the Carlyle International Energy Partnership. CIEP focuses on the energy sector outside North America with a particular focus on oil and gas: upstream, midstream, downstream and oil field services.

Having more than 25 years of experience in the Energy sector, Marcel van Poecke is primarily an Entrepreneur, Investor and Executive Manager. He is the Chairman of AtlasInvest, a private holding company he founded in 2007. AtlasInvest is engaged in investments across the broad energy spectrum.

Mr. van Poecke is also the Chairman of Oranje-Nassau Energie (ONE), an AtlasInvest portfolio company with oil and gas assets in the North Sea and West Africa, with a long track-record of running a diversified upstream portfolio; Vice Chairman of the Energy Intelligence Board; and a non-executive Director on the Boards of Argos-North Sea Group, Hestya, VARO and Discover Exploration.

Prior to forming AtlasInvest, he founded Petroplus from a management buyout in 1993 and successfully led its growth into the largest independent oil refiner in Europe through several major acquisitions and divestments. Petroplus was taken private in 2005 in a transaction led by Carlyle/Riverstone and management. In 2006, Marcel exited Petroplus following the company's successful IPO on the Zurich stock exchange. The transaction was the highest multiple return investment for the Carlyle/Riverstone Energy Fund.

Mr. van Poecke has a degree in Agricultural Business Administration from the University of Wageningen and a Masters in Business Administration from the William E. Simon School of Management of the University of Rochester.

**Daniel Yergin** is a highly respected authority on energy, international politics, and economics and a Pulitzer Prize winner. *Fortune* called him "one of the planet's foremost thinkers about energy and its implications." He is Vice Chairman of IHS Markit, a world leader in critical information, analytics and solutions for the major industries, governments, financial institutions, and markets. Dr. Yergin is also Founder of IHS Cambridge Energy Research Associates.

Dr. Yergin is the author of the bestseller *The Quest: Energy, Security, and the Remaking of the Modern World*. *The Economist* called *The Quest* "a masterly piece of work" and *The Financial Times* said it is "a triumph." *The New York Times* said it is "necessary reading for C.E.O.'s, conservationists, lawmakers, generals, spies, tech geeks, thriller writers," among many others.

Dr. Yergin is known around the world for his book *The Prize: the Epic Quest for Oil Money and Power*, which was awarded the Pulitzer Prize. It became a number one *New York Times* best seller and has been translated into 20 languages.

Dr. Yergin co-authored *Commanding Heights: the Battle for the World Economy* of which the *Wall Street Journal* said, "The *Wall Street Journal* said, "No one could ask for a better account of the world's political and economic destiny since World War II." Both *The Prize* and *Commanding Heights* were made into award-winning PBS-BBC documentaries.

In 2014, the Prime Minister of India presented Dr. Yergin with "Lifetime Achievement Award" and the U.S. Department of Energy awarded him the first "James Schlesinger Medal for Energy Security." In 2015, the University of Pennsylvania presented him with the first Carnot Prize for "distinguished contributions to energy policy." Dr. Yergin was awarded the United States Energy Award for "lifelong achievements in energy and the promotion of international understanding."

Dr. Yergin is a director of the Council on Foreign Relations and a trustee of the Brookings Institution. He is a member of the National Petroleum Council, and on the advisory boards of the Massachusetts Institute of Technology Energy Initiative, Columbia University's Center on Global Energy Policy, and Singapore's International Energy Panel. He is a "Wise Man" of the International Gas Union and became an Adjunct Professor at the China University of Petroleum in Beijing.

Dr. Yergin holds a BA from Yale University, where he founded *The New Journal*, and a PhD from Cambridge University, where he was a Marshall Scholar.

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