

ENERGY POLICY FORUM



In Their Own Words: Examining Shale Gas Hype

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Drilling for Dollars

- Claim very high reserves (EUR) which cannot be verified due to lack of production history
- Drill for Press Releases
- Claim long well lives which holds promise of long term economic benefit
- Rapid growth in production gives impression that strategy is highly successful

Resources vs. Reserves

- Resources - amount of TOTAL gas in the ground
- Reserves - amount of gas which can be extracted using current technology and at current prices

Reserves = Money

- “Companies are evaluated by its shareholders and other stakeholders based upon the accuracy of its reserves reporting. In particular, **reserves reporting directly impact the amount of capital a company can raise in the marketplace**...Reserves are at the core of a company’s ability to access the funds needed to meet these huge needs” - Clean Skies Foundation, Industry funded group, [Bold emphasis mine]

Accuracy of Reserve Reporting

- Netherland Sewell EUR for Barnett at 1.135 Bcf - 2006
- Labyrinth Consulting EUR for Barnett at 1.0-1.5 Bcf for all operators - 2011
- Historical production shows actual EUR of 1.5 Bcf for Chesapeake wells
- Chesapeake claims 3.0 Bcf, twice as high as actual well performance

Fayetteville EUR

- Chesapeake claims 2.6 Bcf for Fayetteville
- “To put into perspective how ridiculous CHK’s claim of 2.6 Bcf is, consider the following: of the company’s 742 operated wells completed on the Fayetteville only 66 (9%) have produced more than 1.0 Bcf and **none** have produced more than 1.7 Bcf. CHK’s average Fayetteville well has produced only 541 Mcf” - Powers Energy Investor, April, 2011

Fayetteville EUR

- Southwestern claims 2.4 Bcf in Fayetteville
- “...there is little doubt that CHK and SWN have grossly overstated their EUR per well. For example, the 594 wells drilled between 2005 and 2007 are unlikely to ever produce much more than 1.0 Bcf each...there is no doubt that Fayetteville operators are using unrealistic decline curves...and b-factors that are unrealistically high.” - Powers Energy Investor, April, 2011

Haynesville EUR

- All operators in Haynesville claim EUR's between 5.0-7.5 Bcf
- Actual EUR's based on historical production: PetroHawk, 4.5, Encana, 3.5, EOG, 3.0 and Chesapeake, 2.75 Bcf - Labyrinth Consulting, 2011

B- factors

- High b-factor (above 1.0) used to estimate shale reserves “yields enormously high reserve estimates which has nothing to do with reality” - Society of Petroleum Engineers, 2008
- PetroHawk used b-factors 1.1
- Chesapeake used b-factors 1.4 - 1.6

PetroHawk b-factors

- “...no evidence that the company had used any assumption to correct for the resulting possible overestimation...if you can find other cases like this...you may have identified overstatement of reserves in those cases” - Dr. John Lee, Architect of SEC Rule Change, Petroleum Engineer, University of Houston, 2011

Drilling for Press Releases

- Monster wells have a very high initial production (IP) rate
- Firms announce such wells in press releases
- High IP allows for “booking” higher reserves and gaining access to capital immediately

High IP “Boosts” Investor Numbers

- “High IP rates may be good for investor reports, but perhaps not that great for the landowner in the long run...As a landowner, you don’t have any choice in the matter as to how hard an oil company flows a new well on your land, so, “too bad” if they let it “burn out” early to boost numbers reported to investors” - Eagle Ford Shale, September, 2011

Industry Insiders Question Drilling for Press Releases

- “...most companies are interested in very high IP for a press release which leads to multi-fractured horizontal wells as the preferred...practice. However as production declines, restimulation becomes necessary but the industry doesn't have a good method for restimulating...horizontal wells. Vertical wells may be a better approach” - former Halliburton Advisor, NY Times, June, 2011

Mathematically Impossible

- 80% of top 50 10-K companies were issued comment letters by SEC regarding anomalies in filings - Ryder Scott, 2011
- PUDs converted at "mathematically impossible" rates
- Only 16% of companies could show with "reasonable certainty" that PUDs would be developed within 5 years - Ryder Scott, 2011

Years to Convert PUD's

Oil and Gas Financial Journal, 2011

- Devon Energy 9.1 years
- Range Resources 11.8 years
- Chesapeake Energy 13.1 years
- Apache Corp. 15.1 years
- W&T Offshore 104.56
- *None in compliance with SEC rules*

SEC Comment

- "Therefore, at this rate of development, it will take at least 50 years to develop all of your PUDs, assuming that no additional PUDs are added during that time. Tell us how this complies..." - Securities and Exchange Commission (SEC), 2010

Questioning Well Lives

- "All proved reserves must meet the standard of reasonable certainty. Therefore, please tell us the evidence that you have that horizontal wells in this reservoir for the properties in question will produce for fifty years and in some instances longer" - Securities and Exchange Commission (SEC), 2010

SEC Rebuttal

- "In regards to your response... as we stated...all proved reserves must meet the standard of reasonable certainty. While a few thousand vertical wells, a very small subset of the total wells that were drilled fifty or more years ago, have exhibited long lives, this would appear to support only the possibility that horizontal wells may exhibit lives of fifty years...By assuming well lives that only a small percentage of vertical wells have achieved, it does not appear that your reserve estimate is reasonably certain to occur. Therefore, please revise your filing to limit the reserves to well lives that are more reasonably certain to occur" - Securities and Exchange Commission, 2010

Glutted Market

- U.S. production 2011 4.5 billion cubic feet per day -
Department of Energy
- U.S. demand 2011 920 million cubic feet per day -
Department of Energy
- Liquids rich production still produces gas

Production Cuts?

- "There's a portion of our portfolio which it's not going to make sense to shut in...There's probably two-thirds of it where the economics are really driven by liquids production and not natural gas prices." - Jeff Sheets, CFO, Conoco Phillips
- "...[the] bulk of our gas is associated gas and comes off with the oil. Not much I can do about cutting that back." - Steve Chazen, CEO, Occidental Petroleum

Press Release

January 2012

- “Chesapeake plans to defer completions of dry gas wells that have been drilled but not yet completed, and also plans to defer pipeline connections of dry gas wells that have already been completed.”

Shale Gas “Holy Grail”

Follow the Circle

- Economic benefits accrue **only** if gas prices remain low
- Low gas prices are not a “gift” from operators. They are a byproduct of overproduction
- “...that is obviously the holy grail for our industry is to have gas achieve oil pricing parity in the U.S.” - Aubrey McClendon, CEO Chesapeake Energy
- Oil pricing parity would NOT equate to low gas prices
- Economic benefits accrue **only** if gas prices remain low

Financial Co-Dependency

- Wall Street Investment banks lead “cheerleaders” for shale industry
- Banks generating massive fees off shale deals
- Shale accounted for 46% of all energy M&A in Q3 2011

Conflict of Interest?

Goldman Sachs	Neutral
BofA/ Merrill Lynch	Buy
Deutschebank	Hold
Morgan Stanley	Overweight
RBS	NA
Jefferies	Buy

Analysts Not Involved in Deals

- “Chesapeake is in serious trouble...Its Enron style of media hype, off balance sheet accounting and excessive leverage has finally caught up with them. The end appears to be near.” - The Deal Pipeline, February, 2012
- Zacks places CHK on bankruptcy watch - February 14, 2012
- “It seems the equity analyst community has played a key role in helping to fuel the shale gas M&A market, acting as chief cheerleader for shale gas plays” - Neal Anderson, Wood Mackenzie, August 2011

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