Tall Tales about Deep Wells: Part 2 of a Series

Smoke & Mirrors: Driller's Tax Plan Far More Generous than 'Arkansas Model,' Bad Deal for Pennsylvanians

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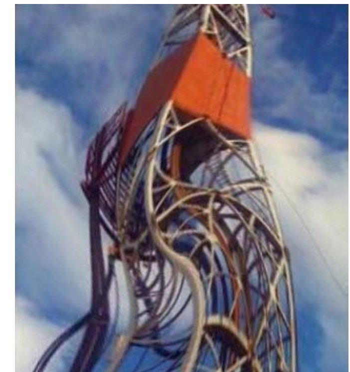
State lawmakers are working to meet an October 1 deadline to enact a severance tax on natural gas drillers in Pennsylvania's Marcellus Shale. Pennsylvania is the only major gas-producing state without a tax or impact fee on producers.



The Marcellus Shale Coalition (MSC), which represents the industry, has cited the "Arkansas model" as its preferred tax plan,[1] and is circulating a proposal that it claims is based on this model. In fact, the industry plan is far more generous than the model on which it is purportedly based. It would significantly reduce revenue collected from the tax, which is intended to compensate Pennsylvanians for the removal of a valuable non-renewable resource.

Like the Carnival's funhouse mirror, the Arkansas plan has been distorted in its Pennsylvania incarnation: bigger, fatter, and better for the industry.

Industry Tax Plan Shortchanges Pennsylvanians

The Marcellus Shale Coalition tax plan, if enacted, is a bad deal for Pennsylvania. It will:

- Reduce tax paid by the industry by 50% to 80% per well.[2]
- Reduce the effective tax rate over a well's lifespan to only 0.9% to 2.9%, depending on the output.[3]
- Tax production at the full 5% rate for a fraction of the well's productive life, as little as 2 to 5 years (wells producing less than 1 billion cubic feet never pay the 5% rate).
- Maintain the current exemption from local property taxes.

Table 1 shows the effective tax rate for wells with four levels of total lifetime output. Under the industry tax plan, a well with total lifetime production of 950 million cubic feet (MMCF) will have an effective tax rate of less than 1%, much less than the regular 5% tax rate. The highest-producing wells will pay a rate of less than 3%, half of what Pennsylvanians pay in sales tax.

Table 1. A Comparison of Effective Tax Rates Over the Life of Marcellus Shale Wells

Lifetime Well Production	950 MMCF	1.6 BCF	2.8 BCF	3.8 BCF	7.3 BCF
Effective Tax Rate Marcellus Shale Coalition Plan	0.9%	1.6%	2.3%	2.6%	2.9%
Effective Tax Rate Using Governor's Plan (Based on West Virginia Rates)	4.6%	5.2%	5.6%	5.7%	5.8%
Tax Reduction Using Marcellus Shale Plan	80%	69%	58%	55%	51%

Source. Pennsylvania Budget and Policy Center calculations

[1] Sean D. Hamill, "Rendell: No drilling moratorium," *Pittsburgh Post-Gazette*, September 8, 2010, http://www.post-gazette.com/pg/10251/1085747-454.stm.

[2] Based on a comparison of the Marcellus Shale Coalition plan to a proposal using West Virginia's rate of 5% of sales plus $0.047 per thousand cubic feet (MCF) on all production until daily output falls below 60 MCF.

[3] Pennsylvania Budget and Policy Center calculations using wells producing 950 million cubic feet (MMCF) to 2.5 billion cubic feet (BCF) over 40 years and Pickering Energy production decline curve developed from Barnett Shale data.

Behind the Funhouse Mirror

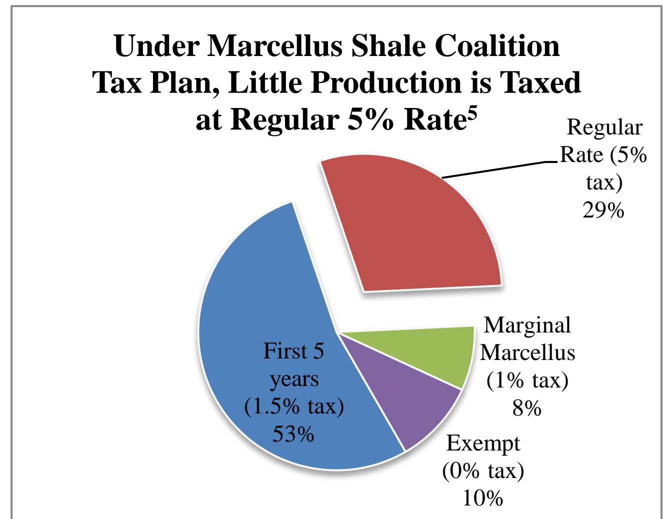
Gas produced from wells in Arkansas is taxed for all of its productive life - about 40 years. Arkansas structures its tax so that wells drilled in shale formations are taxed at a rate of 1.5% for the first three years, then the rate increases to 5%. When production drops to 100 thousand cubic feet (MCF) or less per day, the well is classified as "marginal" and taxed at 1.25% for the rest of its productive life.

Marcellus Shale Coalition Tax Plan Is Not the Arkansas Model

The Marcellus Shale Coalition plan would tax gas production for just a fraction of the 40-year lifespan of a typical shale well. The coalition plan would levy the following rates:

- 1.5% rate for the first five years.
- 5% rate for 2 to 10 years, depending on the size of the well.[4]
- 1% rate for production at 150 MCF per day or less.
- 0% rate for production at 90 MCF per day or less.
- Exempt oil and gas deposits from local property taxes.[6]

The Front-End Tax Break



The industry's plan to tax production at 1.5% for the first five years cuts its tax bill considerably because those early years are when one-third to a half of a well's production occurs.[7] Production from natural gas wells is not steady, but starts off high and drops off very quickly, by as much as 60% in the second year and 80% during the first five years.

Arkansas has had a natural gas severance tax since at least 1957. In 2009, the state increased the tax rate from $0.003 per MCF to 5% of sales price[8] and put in place an initial three-year rate of 1.5% for what it defines as "high-cost wells."[9] Governor Mike Beebe told legislators at the time: "We do not want to hurt a wonderful industry and economic boon to our state that's providing jobs and resources. But we do want them to pay for posterity and fairness and equity; a severance tax that is designed to pay for a nonrenewable, finite resource that our children and grandchildren won't have the benefit of."[10]

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[4] Smaller wells, those producing 1 billion cubic feet (BCF) of natural gas or less, would never be subject to the 5% rate. Some very large wells could be taxed at 5% up to 12 years.

[5] This graph represents a well that produce 2.8 BCF over its lifespan. Percentages vary based on the well size.

[6] A 2002 court decision prohibited property taxation of oil and gas deposits without deliberate authorization by the Pennsylvania Legislature. The Marcellus Shale Coalition wants the prohibition to remain in place as part of a package of legislative changes it supports, including the industry's version of a natural gas severance tax.

[7] Calculations regarding the first five years of well production based on Pickering Energy and EQT production curves.

[8] Jim Watts, "Arkansas: Severance Tax Payoff," *Southwest Bond-Watch, Bond Buyer*, May 20, 2008.

[9] High-cost wells are defined as those drilled into shale formations, deeper than 12,500 feet, or gas produced from tight gas formations, geopressured brine, or coal seams, according to the Arkansas Department of Finance and Administration, "DFA Revenue Rules: Rule 2008-4: Natural Gas Severance Tax Rules (Agency # 006.05)," http://www.dfa.arkansas.gov/offices/policyAndLegal/Documents/et2008_4.pdf.

[10] Bill Smith, "March 31 Special Session for Severance Tax Increase," ARRA News Service, March 22, 2008, http://arkansasgopwing.blogspot.com/2008/03/march-31-special-session-for-severance.html.

The Marcellus Shale coalition proposes an exemption far more generous than Arkansas, asking for an initial five-year rate of 1.5%.

The net result: A more generous tax break in Pennsylvania than in Arkansas.

Special Treatment for the Middle Years

The industry has created a new category called "marginal Marcellus" for wells that produce 90 to 150 MCF per day. These wells would be taxed at only 1% rather than the 5% regular rate.

The net result: A more generous tax break in Pennsylvania than in Arkansas.

The Back-End Exemption: Low-producing Wells

The industry plan uses a higher threshold than current legislative proposals for marginal wells (90 MCF per day or less) that would be exempt from tax. It is also a higher threshold than the Interstate Oil and Gas Compact Commission's[11] 60 MCF per day. This low-producing well exemption can eliminate tax from a well for many years of production. Arkansas provides no such exemption. Instead, the state taxes all marginal production at 1.25%, with high-cost wells defined as marginal once production drops to 100 MCF or less per day.[12]

The net result: A more generous tax break in Pennsylvania than in Arkansas.

Property Tax Exemptions, Too

Gas producers in Arkansas pay property taxes on equipment and gas reserves. Pennsylvania excludes such items from local property taxes. Taxes on mineral values, including oil and gas, generated more than $10.8 million for counties, cities, and local schools in Arkansas in 2008.[13] In Pennsylvania, these assets generated nothing in taxes to support local communities.

The net result: A more generous tax break in Pennsylvania than in Arkansas.

Gas Producers Don't Need Tax Breaks to Lure Them to the Marcellus Shale

The federal tax code provides numerous tax breaks to encourage exploration and development of fossil fuels, including natural gas. The industry enjoys write-offs offered to both mineral and manufacturing entities: immediate write-offs allowed for many drilling costs, generous depletion allowances, and manufacturing deductions.

This preferential treatment has allowed the industry to significantly reduce its tax liability. Range Resources, the leading producer in the Marcellus Shale, was able to use these incentives to whittle its total income tax rate down to 0.4%, according to a 2009 Bloomberg Businessweek report.[14]

Producers are coming to Pennsylvania because drilling in the Marcellus Shale is a good investment. According to energy analyst Manuj Nikhanj, "The quality of the shale is very good. The amount of reserves, the amount of

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[11] The Interstate Oil and Gas Compact Commission is a multistate organization of oil and gas regulators, including Pennsylvania.

[12] Arkansas Department of Finance and Administration, "DFA Revenue Rules: Rule 2008-4: Natural Gas Severance Tax Rules (Agency # 006.05)," http://www.dfa.arkansas.gov/offices/policyAndLegal/Documents/et2008_4.pdf.

[13] Arkansas Assessment Coordination Department, "Estimated Taxes: 2008," http://www.arkansas.gov/acd/estimated_taxes/08_EstimatedTaxes_County.pdf.

[14] Nanette Byrnes, "What U.S. Companies Really Pay in Taxes," *BusinessWeek*, April 23, 2009, http://bwnt.businessweek.com/interactive_reports/corporate_taxes_2009/who_pays_the_least.asp.

production and results you get for every dollar invested is among the best out of any other (gas reserve) in North America."[15]

A reasonable severance tax will not dissuade drilling. In fact, industry experts are already planning on it. The energy investment firm Tudor Pickering Holt & Company says its "Marcellus models already assume 5.5% severance tax."[16]

State Drilling Incentives Don't Spur Production

State drilling incentives (including tax rate cuts) may add to a producer's profits, but do not seem to spur additional production. In evaluating the impact of its tax breaks for drilling, the Louisiana Department of Natural Resources found that the actual effects of most incentives, including tax breaks for horizontal, deep and new wells, are not "clear to decipher."[17]

In 2000, Wyoming, the country's second largest natural gas producer, found that over a 60-year period state oil and gas subsidies (including tax rates) cut state tax collections significantly but had a negligible impact on the number of wells drilled or gas production.[18] Based on the study results, Wyoming ended drilling subsidies.

A similar finding was reached by Headwaters Economics which studied state energy taxes and subsidies and concluded, "We also find no evidence to suggest that the dramatically different effective tax rates in the Intermountain West have led to more or less investment from state to state." Headwaters even discovered that, despite giving subsidies, "Montana has stimulated less, not more, energy development than Wyoming and left more than half a billion in revenue on the table."[19]

Conclusion

With excessive tax breaks and deductions, the industry's "smoke and mirrors" tax plan would be far more generous than the Arkansas model it invokes and produce far less revenue than other plans. For most wells, only a quarter of production would be subject to the "regular" tax rate of 5%, while the remainder would be taxed little or not at all. The dollars given away could be better used for health care, education, rebuilding roads, and remediating environmental damage from drilling. In short, the industry's tax plan is a great deal for drillers, a bad deal for Pennsylvanians.

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[15] Marc Levy, "A Capitol debate brewing over Marcellus Shale tax," Associated Press, September 13, 2010.

[16] Ann Davis Vaughan and David Pursell, *Frac Attack: Risks, Hype, and Financial Reality of Hydraulic Fracturing in the Shale Plays*, Reservoir Research Partners and Tudor Pickering Holt & Company, July 8, 2010, http://www.tudorpickering.com/pdfs/TPH.Fracturing.Report.7-8-10.pdf.

[17] Louisiana Department of Natural Resources, Technology Assessment Division, "Severance Tax Rates plus Tax Exemptions and Incentives," http://dnr.louisiana.gov/sec/execdiv/techasmt/facts_figures/la_severance_tax_rates.pdf.

[18] Shelby Gerking, et al, *Mineral Tax Incentives, Mineral Production and the Wyoming Economy*, December 2000.

[19] Headwaters Economics, *Energy Revenue in the Intermountain West*, Bozeman, Montana, 2008.