



## Reality Check: Natural Gas Industry Report Falsely Claims Sky Will Fall if Severance Tax Enacted

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A gas industry-financed study titled *An Emerging Giant: Prospects and Economic Impact of Developing the Marcellus Shale Natural Gas Play* claims that a severance tax on the extraction of natural gas could undermine the development of Pennsylvania's Marcellus Shale. The July 24 report, however, overplays the positive impacts of increased natural gas production, while minimizing the negative. Among other flaws, it exaggerates the impact a severance tax would have on development of the Marcellus Shale and overstates what taxes the industry now pays, going so far as to count fishing and hunting license fees paid by those who benefit from the industry as a tax due to industry activity. Notably, the report acknowledges that many drillers in the Marcellus Shale will avoid corporate taxes, paying the much lower Personal Income Tax or avoiding taxes altogether through deductions. The report also inflates the economic impact of expanded gas production in Pennsylvania to puff up the industry's economic promise.

Below is a reality check on some of the central claims made in the industry-sponsored report:

**No other study has shown severance taxes affecting production decisions to the magnitude that the industry report suggests.**

***Claim:** "Based upon the model developed for in this study, this tax would reduce drilling activity by more than 30 percent. This would actually lead to an \$880 million reduction in state and local taxes in present value terms from 2009 to 2030."*<sup>1</sup>

**Reality:** State and local taxes have a very limited impact on drilling decisions.

Studies of severance taxes in other states have shown tax rates have little effect on production. A Wyoming study found that a 2-percentage-point reduction in the state oil severance tax would increase production by only 0.7% over the next 60 years while decreasing government revenues significantly. Conversely, raising tax rates contributed greatly to government revenues, with negligible impact on production.<sup>2</sup>

A more recent study using historical data of industry response to oil and gas severance tax changes in Utah found a similar result: changes in severance tax rates, even significant ones, had a large impact on government revenues but not industry production.<sup>3</sup>

According to a study of energy tax regimes in western states by Headwaters Economics: "The oil, natural gas and coal industries are guided chiefly by the location of reserves, and are less

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<sup>1</sup> Page 33.

<sup>2</sup> Shelby Gerking, et al, *Mineral Tax Incentives, Mineral Production and the Wyoming Economy*, December 2000.

<sup>3</sup> Gabriel Lozada and Michael Hogue, *The Effect of Proposed 2009 Tax Changes on Utah's Oil and Gas Industry*, University of Utah, December 18, 2008.

able to relocate than are industries with mobile capital resources (such as textile mills or auto-makers). Other factors such as price, access to markets (e.g., oil and natural gas pipelines), and technology have more significant effects on industry activities. 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.” (Underline added for emphasis)<sup>4</sup>

### **Industry tax impacts are overstated in the report.**

**Claim:** “Total state and local taxes increase more than \$238 million. Taxes generated from indirect business taxes, such as excise taxes, property taxes, and sales taxes also constitute a significant part of the overall tax impacts.”<sup>5</sup>

**Reality:** This figure, representing taxes paid in 2008, appears to be significantly overstated, to the tune of more than \$100 million. As the report uses the 2008 figure as the basis of future tax projections, it produces a significant exaggeration of future taxes state and local governments could expect if no severance tax is enacted. Substituting the more reasonable 2008 base would reduce the report’s 2020 estimate of \$1.4 billion in state and local taxes to approximately \$700 million.

- The largest single part of the state and local tax total is for property taxes paid by businesses, \$72.9 million, accounting for 31% of the total. However, Pennsylvania, unlike other states, does not subject oil and gas reserves to property taxes. Drilling equipment is not subject to tax, either.
- The second largest component is sales tax paid by businesses. In the study, this is estimated to equal \$71.4 million in 2008, or 30% of the total taxes currently paid. Like the property tax figure, this appears to be overstated. Most natural gas companies operating in the Marcellus Shale are headquartered out of state. It seems likely that producers from Texas would buy a large share of equipment and other taxable goods from suppliers they have dealt with for years in their home areas, rather than in Pennsylvania. Even if purchased in Pennsylvania, many items used directly in the extraction of natural gas would be exempt from sales tax under the manufacturing exemption.
- The report counts fishing and hunting licenses, motor vehicle license fees, and other fines and fees paid by individuals with money gained from the industry (through employment in or related to the industry or through royalty payments). These should not be considered in a discussion regarding taxes.
- The estimate includes a tax on “dividends,” which is likely the Capital Stock and Franchise Tax (CSFT). Under current law, the CSFT will be phased out by 2012 so it should not be included in later year estimates.

The report is accurate in its representation regarding income taxes paid by the producers: “Pennsylvania’s 9.9 percent CNI is not paid by many companies and limited liability

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<sup>4</sup> Headwaters Economics, Energy Revenues in the Intermountain West, October 2008, [http://www.headwaterseconomics.org/energy/HeadwatersEconomics\\_EnergyRevenue.pdf](http://www.headwaterseconomics.org/energy/HeadwatersEconomics_EnergyRevenue.pdf).

<sup>5</sup> Page 26.

corporations (LLC)'s only pay at the 3.07 percent individual tax rate. Additionally, many companies have sufficient deductions that they pay no CNI tax.”<sup>6</sup>

### **Economic impact results appear exaggerated compared to other industry reports.**

**Claim:** “So for every \$1 that the Marcellus industry spends in the state, \$1.94 of total economic output is generated. This estimate is considerably above the 1.34 multiplier found by Baumann et. al (2002) in their study of the impacts of oil and gas activities on the Louisiana economy. In a study of the economic impacts of the natural gas industry in New Mexico, Walker and Sonora (2005) assume an output multiplier of 1.43. The study by Snead (2002) finds an output multiplier of 1.55 for Oklahoma, which reflects the more developed oil service sector in that region. This study’s higher multiplier probably reflects our detailed expenditure analysis based upon company accounting data, which provide a more accurate measurement of inter-industry purchases.”<sup>7</sup>

**Reality:** Determining multipliers is an inexact science, at best. When a study has such a different result than other similar studies, as happened in the “An Emerging Giant” report, it raises questions about the report’s findings.

A California report on using economic multipliers cautions that “multipliers will estimate impacts realistically only if new firms buy from local industries in the same proportion as existing firms in the area. Moreover, local industries must be able to increase their production to supply the new firm. These conditions are rarely met completely. As a result, multipliers usually overstate indirect impacts.”<sup>8</sup>

### **Richness of deposit, not business climate, is the most likely reason for an increase in recent drilling in Pennsylvania compared to West Virginia.**

**Claim:** “Pennsylvania drilling increased much more than West Virginia, presumably due to business climate, since West Virginia actually has more productive oil and gas properties and as much or more producing area.”<sup>9</sup>

**Reality:** Rather than attributing the recent increase in drilling in Pennsylvania to a better business climate, the industry report should consider that Pennsylvania overlays a portion of the Marcellus Shale that is more plentiful, thicker and likely to hold more natural gas than West Virginia. In this case, the favorable business climate equates to basically a free ride for the industry – no severance tax, no local property taxes, and a low personal income tax rate paid by limited liability corporations (which is how many production companies are organized in the state). Since drilling is based on where the most productive reserves are likely located, a more likely reason for Pennsylvania’s increased activity is due to having a larger share of the

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<sup>6</sup> Page 30.

<sup>7</sup> Pages 23-24.

<sup>8</sup> California Economic Strategy Panel “Using Multipliers to Measure Economic Impacts,” California Labor and Workplace Development Agency, 2009, [http://www.labor.ca.gov/panel/pdf/Using\\_Multipliers\\_to\\_Measure\\_Economic\\_Impacts.pdf](http://www.labor.ca.gov/panel/pdf/Using_Multipliers_to_Measure_Economic_Impacts.pdf).

<sup>9</sup> Page 30.

“Marcellus Shale Fairway,” the deepest, most highly pressurized portion of the shale formation. The fairway is thought to be the most productive area in terms of natural gas production.<sup>10</sup>

### **The assumptions behind the model cannot be reviewed.**

In addition to the substantive issues discussed above, we also have concerns about the input/output model that was used to claim that a severance tax would reduce drilling activity by more than 30%. That model looks at the state’s severance tax rate in a vacuum and is predicated on a set of assumptions that were not included in the report, so they cannot be validated. As the results of the model are only as good as the assumptions that went into it, one cannot assess the results with any degree of certainty.

The model used in the industry-financed study is called Implan, a user-friendly software package used by a variety of groups to bolster their particular point of view in public policy debates. According to an interview with the maker of Implan, users “can use Implan software and data to generate numbers that support any side of an argument – and get wildly varying results depending on who’s clicking the mouse.”<sup>11</sup>

This 30% reduction result begs the question: where would the drillers go instead? All of the other competing shale regions lie in states that, unlike Pennsylvania, assess severance and property taxes on natural gas production. Within the Marcellus Shale region, New York levies property taxes on wells, while West Virginia levies both property and severance taxes. Of the 14 states with higher natural gas production than Pennsylvania, 13 impose a severance tax on its extraction. Even with severance and property taxes on natural gas production, West Virginia has produced more natural gas than Pennsylvania every year since 1990.<sup>12</sup>

**Conclusion:** The “An Emerging Giant” report serves the narrow financial interests of its funder, the natural gas industry. Policymakers could best serve the interests of all Pennsylvanians by more closely scrutinizing the report and the interests behind its prescriptions. The decision for Pennsylvania policymakers should not be whether they will entice drillers to come to the state, but rather whether they want to continue to subsidize the industry by not collecting a tax, which forces other taxpayers to foot the bill for cleanup, environmental damage, infrastructure repair, emergency services, and other social costs.

*For more of the Pennsylvania Budget and Policy Center’s research and analyses of the proposed severance tax on natural gas production, go to <http://www.pennbpc.org/severance-tax>.*

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<sup>10</sup> Cornell University Cooperative Extension Natural Gas Development Resource Center, “Where is the Marcellus Shale being developed?” 2008 (accessed August 22, 2009), <http://gasleasing.cce.cornell.edu/fairway.html>.

<sup>11</sup> Sara Aasa, “The Numbers Factory,” Twin Cities Business, February 2008, <http://www.tcbmag.com/features/features/95796p1.aspx>.

<sup>12</sup> U.S. Energy Information Administration, “U.S. Natural Gas Wellhead Value and Marketed Production,” release date May 29, 2009, [http://tonto.eia.doe.gov/dnav/ng/ng\\_prod\\_whv\\_dcu\\_nus\\_a.htm](http://tonto.eia.doe.gov/dnav/ng/ng_prod_whv_dcu_nus_a.htm).