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By Diana Polson and Stephen Herzenberg **June 2018**

Governor Wolf's 2018 Severance Tax Proposal Could Bring in $1.7 Billion of Revenue Over the Next Five Years

In 2014, Pennsylvania became the second-largest natural gas producer in the U.S. and remains so today, behind only Texas.[1] In 2017, gas production exceeded 5.3 trillion cubic feet and continues to rise. Despite rising production, Pennsylvania remains the only major gas-producing state that allows companies to drill without paying taxes that increase with the volume of gas extracted.

Drilling companies do not make up for Pennsylvania's lack of a severance tax by paying the currently established impact fee, which is a "per well" amount independent of the volume of gas extracted from the well. As a result, while gas production has increased five-fold since 2011, impact fee payments have not increased five-fold as they would with a severance tax — instead, revenues raised from the impact fee have fluctuated between $173 and $227 million based on the number of wells drilled.

Governor Wolf proposed a severance tax as a part of his 2018-19 Executive Budget. The tax rate would be tied to the price of natural gas and the collected tax would increase with the amount of gas produced. Even though projections of future gas prices have fallen in the last year, Governor Wolf's proposal is projected to bring in more than $200 million next year and roughly $400 million starting in 2021-22.[2] Over the next five years, this severance tax would bring in a projected $1.7 billion to the state. The funds raised from the severance tax would be an addition to the current impact fee, which would remain in place. Together, the impact fee and severance tax would put Pennsylvania's natural gas extraction taxes roughly on a par with other major gas-drilling states, with a lifetime effective tax rate of 4%.

Pennsylvania cannot afford to leave this money on the table any longer, given the state's desperate need for revenue to invest in education, human services, environmental protection, and job creation.

Impact Fee Payments Hover at Around $200 Million As Gas Production Mushrooms

Pennsylvania's impact fee charges companies a fee for each well they drill. The fee is based on the number of years since a well was drilled and the price of natural gas (but not the amount or value of gas extracted). There has been a steady increase in the number of horizontal wells and in gas production since 2011. (Figures 1 and 2). Yet Figure 3 shows that more wells and gas production have not meant more revenue for

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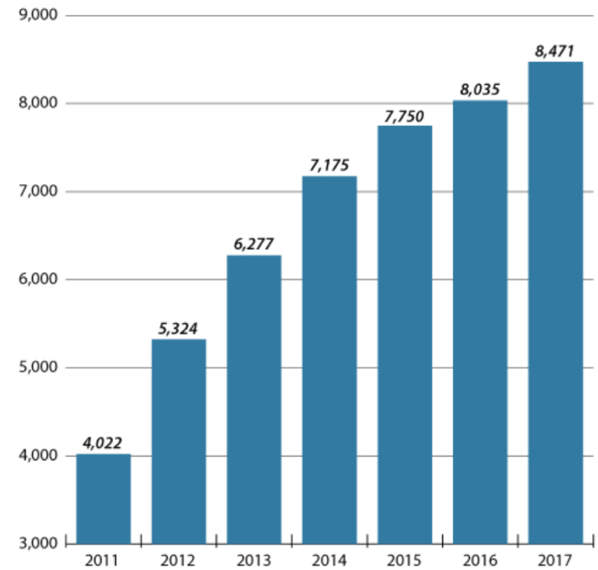
[1] U.S. Energy Information Administration. "Pennsylvania State Energy Profile: Pennsylvania Quick Facts." Accessed at https://www.eia.gov/state/print.php?sid=PA.

[2] The IFO estimates that the governor's proposal would bring in $210 million in 2018-19, $400 million by 2021-22 and $420 million by 2022-23. See Independent Fiscal Office. "Analysis of Revenue Proposals FY2018-19 Executive Budget," April 2018, p. 8; http://www.ifo.state.pa.us/download.cfm?file=/Resources/Documents/Revenue-Proposal-Analysis-2018-04.pdf. The Wolf Administration estimates that the severance tax would bring in $248.7 million in 2018-19 and $393.5 million by 2022-23. See Governor Tom Wolf, "2018-19 Governor's Executive Budget"; p. C1-12; http://www.budget.pa.gov/PublicationsAndReports/CommonwealthBudget/Documents/2018-19%20Proposed%20Budget/2018-19%20Governor%27s%20Executive%20Budget%20-%20Web.pdf.

the state. Impact fee revenue has hovered between $173 and $227 million and has not steadily increased as gas production has since 2011.

Figure 1:

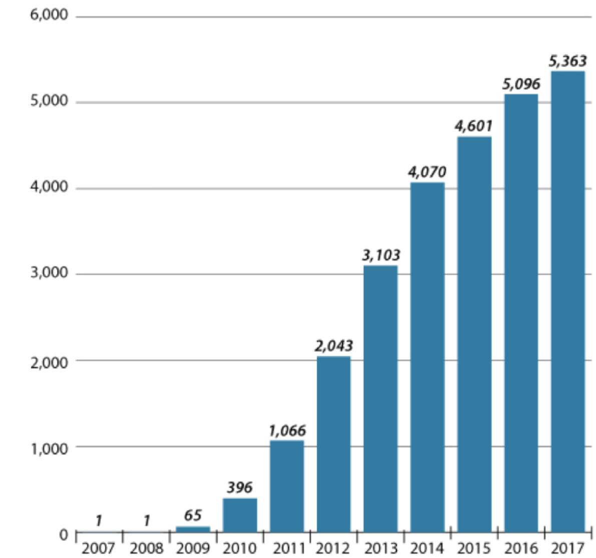
Number of Horizontal Wells in Pennsylvania, 2011-2017



Source: Pennsylvania Budget and Policy Center analysis of Pennsylvania Public Utility Commission Producer Impact Fee reports, online at https://www.act13-reporting.puc.pa.gov/Modules/Reports/Reports.aspx

Figure 2:

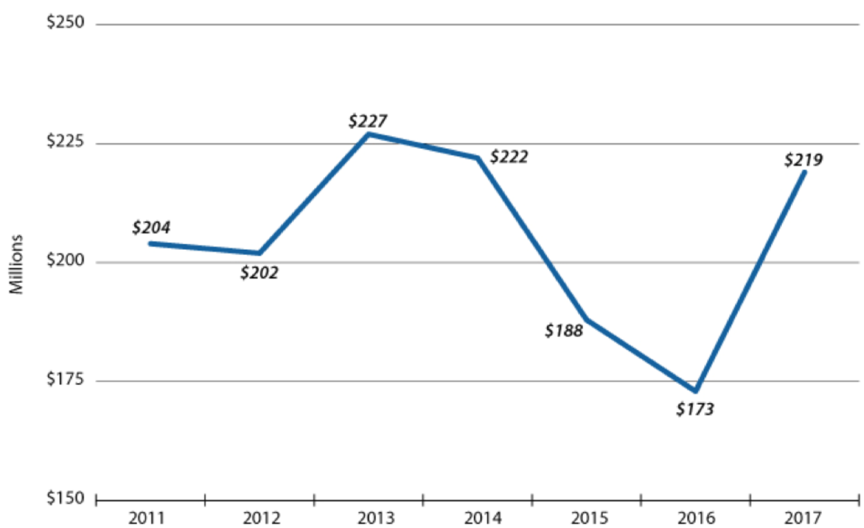
Pennsylvania Gas Production from Unconventional Wells (billion cubic feet)



Source: Pennsylvania Budget and Policy Center analysis of data from Pennsylvania Department of Environmental Protection, online at https://www.paoilandgasreporting.state.pa.us/publicreports/Modules/Welcome/ProdWasteReports.aspx. Click on "Production Report" and then select a combination of reporting periods (e.g., 12 individual months or two six-month periods) for unconventional wells that add up to each of the years from 2011 to 2016. Click "View Report" on the right and production data come up for each well, along with a "Gas Total" figure at the top for the year in question. For 2007 to 2010, we used data on unconventional wells in Michael Wood, "Gas Production Booms, Drillers' Corporate Taxes Plummet," June 9, 2014; http://www.pennbpc.org/gas-production-booms-drillers-corporate-tax-payments-plummet

Figure 3:

Total Revenues from Pennsylvania Impact Fee, 2011-2017



Source: Impact fee revenue numbers for 2011-2016 from Pennsylvania Utility Commission Producer Impact Fee reports (2011-2015): https://www.act13-reporting.puc.pa.gov/Modules/Reports/Reports.aspx. 2017 number from Independent Fiscal Office (IFO) http://www.ifo.state.pa.us/releases.cfm?id=179

State legislators and former governor Tom Corbett structured the impact fee as a per-well fee rather than as a severance tax tied to the volume or market value of gas produced in the state. They did this, in part, so it could be labeled a "fee," not a tax. As a result, the impact fee fails to provide a steady source of revenue that grows with the volume and value of gas produced in the state.

Forgoing a severance tax and lowering overall taxes on drilling companies has not led to an increase in drilling or production relative to neighboring states.[3] Instead, Pennsylvania is allowing companies to extract natural gas without paying a severance tax which would help the state address any budget deficits it may face and pay for essential investments and services such as education, health care, and human services.

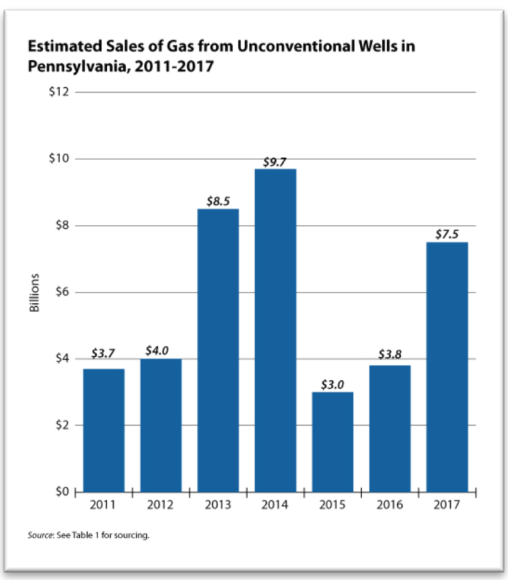
Gas Corporations Avoid Paying Taxes

As shown in our previous brief, gas corporations are not making up for the lack of a severance tax through other corporate tax payments. In fact, two-thirds of gas companies in Pennsylvania avoid corporate tax payments by structuring their drilling operations as pass-through entities so that they are only subject to the state's 3.07% personal income tax instead of the 9.99% corporate net income tax rate. The one-third that are not pass-through entities can lower their Pennsylvania taxable corporate net income using tax loopholes as well as federal and state tax breaks for gas drilling. For example, they can use Delaware holding companies to shift profits to a neighboring state that has no corporate income tax.

The Annual Effective Tax Rate of Pennsylvania's Impact Fee

Figure 4 shows that the total sales from gas produced in Pennsylvania in 2017 was $7.5 billion. That same year, extraction companies paid $219 million in impact fees in the state for an annual effective tax rate (ETR — taxes collected as a percentage of the market value of gas extracted) of 2.9% (see Table 1).[4]

Figure 4:



[3] Headwaters Economics. "What Do Local Governments Receive from Oil and Gas Production Taxes?" December 2016. Accessed at https://headwaterseconomics.org/dataviz/oil-gas-local-governments-production-tax-revenue/

[4] As noted in the text, the annual effective tax rate (ETR) is calculated by the revenues collected in a fiscal year divided by the market value of the gas produced. This measure is good for comparing the ETR within one state over time. The annual ETR, however, can fluctuate a lot from year to year because of changes in the volume of gas extracted, price, the age, and number of wells, etc. The lifetime ETR is a better calculation to use when comparing state ETRs. Independent Fiscal Office. "Analysis of Revenue Proposals, FY 2018-19 Executive Budget." April 2018.

As shown in Table 1, the effective price (the price of gas minus post-production costs) in 2015 and 2016 ($.65 and $.75 respectively) was less than half the price in the four previous years: 2011 ($3.47), 2012 ($2.00), 2013 ($2.74) and 2014 ($2.38). As the price of gas fell, the market value, or estimated total sales for extraction companies, plummeted in 2015 and 2016, resulting in an uptick in the effective tax rate. The price of gas increased in 2017 which led to a lower effective tax rate.

Table 1:

Pennsylvania's Impact Fee Annual Effective Tax Rate (ETR)

Calendar Year	Impact Fee Revenues (thousands) (1)	Unconventional Production (MMcf) (MMcf =million cubic feet) (2)	Price of Gas ($/Mcf) (Mcf = thousand cubic feet) (3)	Market Value (thousands)	Annual ETR
2011	$204,210	1,065,824	$3.47	$3,698,409	5.5%
2012	$202,422	2,043,361	$2.00	$4,086,721	5.0%
2013	$227,124	3,102,890	$2.74	$8,501,919	2.7%
2014	$222,437	4,070,390	$2.38	$9,687,529	2.3%
2015	$187,661	4,600,905	$0.65	$2,990,588	6.3%
2016	$172,758	5,096,092	$0.75	$3,822,069	4.5%
2017	$219,371	5,363,481	$1.40	$7,508,873	2.9%

(1) Impact fee revenue numbers from Pennsylvania Utility Commission Producer Impact Fee reports (2011-2016): https://www.act13-reporting.puc.pa.gov/Modules/Reports/Reports.aspx. 2017 numbers from Independent Fiscal Office (IFO) http://www.ifo.state.pa.us/releases.cfm?id=179

(2) Production numbers from Pennsylvania Department of Environmental Protection https://www.paoilandgasreporting.state.pa.us/publicreports/Modules/Welcome/ProdWasteReports.aspx

(3) The numbers for the price of gas comes from Independent Fiscal Office (IFO) "2017 Impact Fee Estimate," IFO Research Brief 2018-2; http://www.ifo.state.pa.us/download.cfm?file=/Resources/Documents/NGIFE-2018.pdf and the IFO "2016 Impact Fee Estimate," IFO Research Brief 2017-1. This source used a weighted average calculation of spot prices at the Dominion South and Leidy trading hubs (calendar year converted to dollars per thousand cubic feet ($1.55 for 2016). The IFO subtracts $0.80 of post-production costs from this price before computing the Effective Tax Rate.

Governor Wolf's Severance Tax Would Generate $1.7 Billion over the Next Five Years

How much could Governor Wolf's severance tax proposal increase revenue for the state? Table 2 shows estimates from two different sources. The first column is the governor's revenue estimates (from his Executive Budget) and the second column is the Independent Fiscal Office's estimates. For ease of reporting in the text below, we will use the IFO estimates. The state can raise about $210 million this next fiscal year (2018-19) and this would steadily increase to an estimated $420 million in five years in 2022-23. Over the next five years, this severance tax would generate an additional $1.7 billion.

Table 2:

Projected Revenue from the Governor's Proposed (2018-19) Severance Tax (in thousands)

	Governor's Estimate (1)(3)	IFO Estimate (2)
2018-19	$248,700	$210,000
2019-20	$263,100	$277,000
2020-21	$355,300	$379,000
2021-22	$376,500	$400,000
2022-23	$393,500	$420,000
Total	$1,637,100	$1,686,000

(1) From C1-12 of Governor's 2018-19 Executive Budget

(2) Page 8 of IFO's analysis of Revenue Proposals, FY 2018-19 Executive Budget

(3)The tax would raise $248.7 million in its initial year, climbing to almost $400 million in 2022-23. These estimates are based on IHS Global Insight historical and forecast price data, along with actual well and production data from the PA Department of Environmental Protection. (from Severance Tax-1.pdf" from Shelly Lions)

The Governor's Proposed Severance Tax, When Combined with the Impact Fee, Results in a Tax in Line with Other Large Gas-Producing States

While we discussed the annual effective tax rate above, the lifetime effective tax rate is a better measure of ETR's across states. The lifetime ETR is the average effective tax rate over all of the production years for newly drilled wells. As the table and graph below show, Pennsylvania's current impact fee has a lifetime effective tax rate of 1.6%. The governor's proposed severance tax would have an ETR of 2.4%. Combined with the impact fee, the governor's proposal would result in an ETR of 4%. This is just above Arkansas, Louisiana, and Texas and below Oklahoma and West Virginia. Only Ohio has a severance tax ETR below what Pennsylvania's impact fee ETR is without the proposed severance tax — and Ohio's Governor John Kasich has been trying to raise Ohio's severance tax rate for several years.

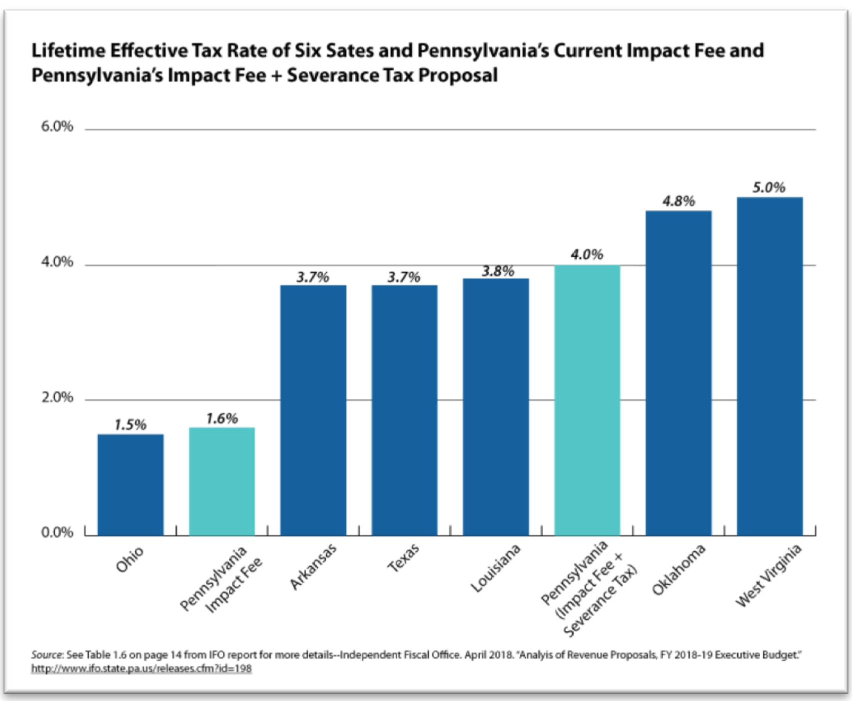
Table 3:

The Independent Fiscal Office's (IFO) estimate of the Lifetime Effective Tax Rates in Seven Natural Gas Producing States

	Statutory Tax Rate	ETR at Wellhead
Arkansas	5.0%	3.7%
Louisiana	11.1 cents/mcf	3.8%
Ohio	2.5 cents/mcf	1.5%
Oklahoma	7.0%	4.8%
Texas	7.5%	3.7%
West Virginia	5.0%	5.0%
Pennsylvania (combined Impact Fee and Proposed Severance Tax)	n/a	4.0%
Current Impact Fee	n/a	1.6%
Proposed Severance Tax	various	2.4%

Source: See Table 1.6 on page 14 from IFO report for more details - Independent Fiscal Office. April 2018. "Analysis of Revenue Proposals, FY 2018-19 Executive Budget." http://www.ifo.state.pa.us/releases.cfm?id=198

Figure 4:



The Severance Tax Primarily Will Be Paid for By Natural Gas Consumers Outside of Pennsylvania

The Independent Fiscal Office estimates that 80% of the natural gas produced in Pennsylvania is purchased by residents of other states and internationally.[5] Therefore, only 20% of the tax burden falls on Pennsylvania residents. Once you take into account the amount paid by lease holders, the IFO estimate of costs borne by Pennsylvania residents or businesses is only 18.9%. If you consider consumption by residents only (not businesses), that number shrinks considerably.

It's Time for a Real Severance Tax in Pennsylvania

As production continues to grow, Pennsylvania is losing out on millions of dollars of revenue each year. The impact fee in Pennsylvania has a lower effective tax rate on drilling than most other major drilling states (all but Ohio), even while gas production grows rapidly, and revenues appear poised to grow in coming years due to a combination of rising production volume and rebounding prices.

Other natural resource-rich states impose more reasonable taxes on resource extraction, including through severance taxes on the value of gas extracted. They then use these resources to invest in K-12, higher education, human services, economic diversification, and natural resource protection to improve quality of life and the environment in their state. Alaska, Wyoming, and North Dakota, for example, each invest three to five times per capita what Pennsylvania does in higher education. These states use severance taxes, in part, to rank first, second, and fourth in investment per capita in higher education. Pennsylvania languishes in forty-seventh place.

Governor Wolf's proposed severance tax combined with the existing impact fee would result in a lifetime effective tax rate of 4.0%, in line with many other natural gas-rich states. Under this plan, Pennsylvania could generate about $1.7 billion dollars over the next five years. Our state, our communities and our children live with choices made by lawmakers regarding taxing highly profitable companies and funding critical investments — as long as gas drilling occurs within our state, companies should be adequately taxed. It's time for Pennsylvania to make the right choice and enact a real severance tax.

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[5] The source for the 80% claim and the other claim in the third sentence of this paragraph is Independent Fiscal Office. "Analysis of Revenue Proposals, FY 2017-18 Executive Budget." April 2017. Accessed at: http://www.ifo.state.pa.us/download.cfm?file=/Resources/Documents/Revenue_Proposal_Analysis_April2017.pdf See page 14-15.