INDEPENDENT FISCAL OFFICE

March 16, 2018

The Honorable Lisa Baker
Senate of Pennsylvania
362 Main Capitol Building
Harrisburg, PA 17120

Dear Senator Baker:

Thank you for your letter dated March 1, 2018 that requests the Independent Fiscal Office (IFO) to assess whether the impact of post-production costs on landowner royalty payments could be quantified under the proposed severance tax included in the Executive Budget. Your letter notes that the deduction of those costs is a common clause in many landowner leases and large deductions could dramatically affect property owners.

For the purpose of this analysis, the IFO attempted to establish a baseline for statewide natural gas royalties paid over the past five years. That baseline will provide context for any new costs that may be passed back to landowners due to a new severance tax. The only published data source that could be used for that purpose are amounts reported on state income tax returns. Because the Pennsylvania personal income tax has no exemptions or deductions, all landowners who receive royalty payments should file state tax returns and report those amounts on an annual basis.

Unfortunately, royalty income is not reported separately on the Pennsylvania income tax return, but is combined with rental, patent and copyright income on line 6 of the PA-40 return. In order to isolate natural gas royalty payments reported on the tax return, the IFO used the following methodology:[1]

- Identify the top producing counties that comprise the great majority of natural gas production. For this analysis, the following counties were used: Susquehanna, Washington, Bradford, Greene, Lycoming, Wyoming, Tioga and Butler. For 2016, those counties comprised nearly 90 percent of total state production.
- Identify the most recent year in which little to no natural gas royalty income was received in those counties. For this analysis, tax year 2006 was used and the analysis assumes that 10 percent of the relatively small amounts reported in that income field was attributable to natural gas royalty payments.[2]

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[1] The analysis excludes royalties paid to state lands.

[2] The analysis is not sensitive to this assumption. The percentage could be 0 or 25 percent and it would only change the total dollar estimate by 2 to 3 percent for most years. For 2006, the U.S. Energy Information Administration

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- Assume a counterfactual growth rate if natural gas royalties had not been paid in those counties from 2006 to 2016. An analysis of comparable or "control" counties suggests a counterfactual growth rate of 4 percent per annum for other income (rentals, patents and copyrights) reported in that tax field.
- Compute the differential between the actual and counterfactual amounts. The difference is assumed to be natural gas royalty payments in those counties.
- Finally, apply two factors that increase the estimate. The first factor is a 10 percent gross-up to convert the eight counties to a statewide total. The second factor is a 7 percent gross-up to account for non-compliance and misreporting.[3]

The enclosed table displays the results of the analysis based on these assumptions. The top portion lists actual amounts reported on tax returns for tax year 2006 and tax years 2012 through 2016. The counterfactual scenario assumes that 90 percent of the amount in 2006 was attributable to income other than natural gas royalties (mostly rental income) and grows those amounts by 4 percent per annum. The difference is the estimated natural gas royalty payments. The bottom of the table shows the adjustment to convert to statewide totals (10 percent gross up) and for non-compliance (7 percent gross up).

The analysis estimates that natural gas royalty payments totaled $919 million in tax year 2012, peaked at $1.62 billion in tax year 2014, and then declined to $639 million in tax year 2016. Three items should be noted regarding these figures. First, these estimates could exclude some amounts paid to individuals who live out-of-state and did not file a state tax return. Second, the estimates include any "signing bonus" payments that leaseholders may receive prior to the drilling and extraction of natural gas. Third, the data for 2016 are preliminary and are subject to revision.

The data reveal a dramatic increase in payments since the 2006 base year. For most counties, royalty payments peaked in 2014, although there are exceptions (Tioga and Butler).[4] The collapse of natural gas prices in 2015 and 2016 motivates the large reduction in estimated royalty payments, even though statewide production increased. The IFO expects that statewide royalty payments will increase appreciably in 2017 due to the partial recovery of natural gas prices.

In order to derive the income base for the royalty payment computation, extraction firms may deduct various costs, such as gathering, processing and transportation costs, to bring the gas from the wellhead to the market. Extractors generally do not publish those costs and they could vary significantly based on locality and firm. Hence, it is not possible to assess in a reliable manner

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estimates that total marketed natural gas production in Pennsylvania was 176 billion cubic feet (bcf). For 2016, the estimate is 5,313 bcf, an increase of 2,919 percent.

[3] Firms must report royalty payments on IRS Form 1099-MISC. Those forms are used by the IRS and Pennsylvania Department of Revenue to ensure compliance with the tax code. Recent IRS tax gap studies find that the net misreporting percentage (i.e., the share of income that should have been reported but was not) for income with "substantial information reporting" (such as a 1099-MISC) averaged 7 percent for tax years 2008 to 2010. See "Federal Tax Compliance Research: Tax Gap Estimates for Tax Years 2008-2010," Internal Revenue Service (May 2016).

[4] The county-level dollar amounts are based on the primary residence of the taxpayer. A taxpayer could file a return from their residence in a given county, but also own lands in other counties that receive royalty payments.

whether extraction firms have been deducting more or less post-production costs over time, and the data only reveal trends in the actual royalties paid after the deduction of those costs.

Your letter asked about the potential impact of the proposed severance tax on future royalty payments. The proposed severance tax is a volume-based tax that levies a rate of 4.2 cents per mcf if the NYMEX price is $3.00 or less and 5.3 cents per mcf if the NYMEX price is greater than $3.00 per mcf but less than $5.00. Assuming a tax rate of 4.2 cents per mcf, the IFO estimates that the proposed severance tax would generate $210 million of tax revenue during the first fiscal year (ten months of collections only).[5] By the third year, the IFO assumes the tax rate would increase to 5.3 cents per mcf and tax revenues would increase to $379 million.[6] It should be noted that these estimates assume that (1) natural gas output would contract by 3 to 4 percent in response to the new tax and (2) additional pipeline capacity that is projected to come online occurs.

States that levy a natural gas severance tax allow those amounts to be treated like a post-production cost. Hence, they are deducted from the base against which the contractual royalty rate is applied. The analysis assumes that the average Pennsylvania royalty rate is 13.5 percent. If so, then $28 million ($210 million * 13.5 percent) of the proposed severance tax could be passed back to landowners. At $379 million of new tax, then $51 million could be passed back to landowners.[7] For simplicity, these amounts assume that the price received by extractors does not increase in response to the tax (i.e., the tax is not passed forward to consumers). In the longer-term, if the price did increase in response to the tax, then royalties would also increase and thereby offset some (or all) of the tax passed back to landowners.[8] The amount of the offset would depend upon how much of the tax is passed forward to final consumers through higher prices.

I hope this letter is responsive to your request. Per office policy, this letter will be posted to the IFO website three days after transmittal to your office. If you have further questions regarding this analysis, please do not hesitate to call me (717-230-8293).

Sincerely,

Matthew J. Knittel

Matthew Knittel
Director, Independent Fiscal Office
Enclosure

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[5] The revenue estimates for the proposed severance tax are preliminary and may be updated.
[6] Current price projections suggest that the NYMEX price for calendar years 2018 and 2019 will be close to the $3.00 per mcf threshold at which the tax rate would increase from 4.2 cents to 5.3 cents. The analysis assumes the price will exceed the $3.00 threshold by FY 2020-21.
[7] Since the release of the original letter on March 16, 2018, the Administration provided the following language regarding the severance tax proposal in the Executive Budget: "A producer may not make the tax imposed under this section on natural gas severed under a lease an obligation, indebtedness or liability of the lessor and may not otherwise require the lessor to reimburse the producer for the amount of the tax." If this language is enacted and can be enforced, it would imply that current landowners would be held harmless from any pass back of the new severance tax. On a prospective basis, it is possible that royalty rates for new leases could be reduced to reflect a portion of the new tax.
[8] Conventional analysis typically assumes that extractors pass most existing severance taxes forward to consumers in the long-term, once the market has adjusted to the imposition of the tax and reaches a steady state.

Natural Gas Royalty Payments in Pennsylvania

Top Producers (2016)	2006	2012	2013	2014	2015	2016
	Rent-Royalty-Copyright-Patent Income ($ millions)					
1 Susquehanna	$8	$107	$197	$263	$161	$123
2 Washington	58	235	296	468	314	243
3 Bradford	16	132	188	234	119	79
4 Greene	6	58	111	141	102	92
5 Lycoming	27	88	99	106	72	53
6 Wyoming	8	39	72	110	52	36
7 Tioga	8	54	57	64	80	39
8 Butler	41	251	156	178	147	98
	Rent-Copyright-Patent Income Only: Exclude Royalties					
1 Susquehanna	$7	$9	$9	$10	$10	$11
2 Washington	52	66	68	71	74	77
3 Bradford	14	18	19	19	20	21
4 Greene	6	7	8	8	8	9
5 Lycoming	24	31	32	33	35	36
6 Wyoming	7	9	9	9	10	10
7 Tioga	8	10	10	10	11	11
8 Butler	36	46	48	50	52	54
	Difference: Natural Gas Royalties					
1 Susquehanna	$1	$97	$188	$253	$150	$112
2 Washington	6	169	228	397	240	166
3 Bradford	2	114	169	214	99	58
4 Greene	1	51	104	133	94	84
5 Lycoming	3	58	67	73	37	17
6 Wyoming	1	30	63	101	42	26
7 Tioga	1	44	47	54	70	28
8 Butler	4	205	108	128	95	44
Convert to Statewide Totals						
Other Counties (10%)	2	85	108	150	92	59
Non-Compliance (7%)	1	64	81	113	69	45
TOTAL ($ millions)	**$20**	**$919**	**$1,163**	**$1,616**	**$988**	**$639**

Source: Pennsylvania Department of Revenue, Personal Income Tax Statistics, various years.