

# 2016 Impact Fee Estimate

Pennsylvania imposes an annual impact fee on unconventional (i.e., shale) natural gas wells that were drilled or operating in the previous calendar year. This research brief uses recent data published by the Department of Environmental Protection to estimate collections for calendar year (CY) 2016, which will be remitted in April 2017.<sup>1</sup> This brief also translates the impact fee into an annual average effective tax rate (ETR) based on recent natural gas price and production data. The ETR is a metric that quantifies the implicit tax burden imposed by the impact fee in a given year.

Proceeds from the impact fee are distributed to local governments and state agencies to provide for infrastructure, emergency services, environmental initiatives and various other programs. Local governments receive funds based on the number of wells located within their boundaries or their proximity to jurisdictions where natural gas extraction took place. Historical and estimated distributions are shown in Table 1.

The annual impact fee for an unconventional natural gas well is determined according to a bracketed schedule, based on the number of years since a well became subject to the impact fee (operating year), the type of well (horizontal or vertical) and, to a limited extent, the price of natural gas.<sup>2</sup> Wells that produce below a certain threshold are exempt from the fee, depending on the type of well and the operating year. Horizontal wells in operating years four or greater that produce less than 90 Mcf (thousand cubic feet) per day are exempt. Plugged horizontal wells are

exempt after remitting the fee in the first year. Vertical wells that produce below the 90 Mcf threshold are exempt from the fee in any operating year.

The estimated amount of the impact fee for CY 2016 is \$174.6 million, which is \$13.1 million less than the amount collected for the prior year. Table 2 on the next page details the well count, fee schedule and estimated collections by operating year. The primary reasons for the decline in collections are as follows:

- **New wells insufficient to offset aging of wells.** The impact fee is highest in a well’s first operating year, and declines as the well ages (see Table 2). Revenue from the 503 new wells spud is not expected to offset reduced collections from older wells as their fees decline. Estimated net impact: -\$9.6 million.
- **Exempt status and other.** Includes the net effect of: (1) reduced collections from newly-exempt wells as their production falls below the 90 mcf threshold; (2) collections from previously-exempt wells rising above the 90 mcf threshold; and (3) the resolution of late or disputed fees from previous years. Estimated net impact: -\$3.5 million.

The impact fee does not directly respond to the price of natural gas or the volume of production, and it does not provide a measure of tax burden relative to natural gas sales. For the latter purpose, this research brief computes an annual average ETR. The ETR is equal to the annual impact fee revenues divided by the total market value of unconventional natural gas production. The market value is equal to the product

**Table 1: Impact Fee Revenues and Distributions**

	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>
Total Revenues	\$202,472	\$225,752	\$223,500	\$187,712	\$174,600
Counties, Municipalities and HARE Fund <sup>1</sup>	107,683	123,151	123,300	101,800	94,000
Marcellus Legacy Fund	79,289	84,601	82,200	67,867	62,600
Commonwealth Agencies	10,500	10,500	10,500	10,500	10,500
Conservation Districts/Commission	5,000	7,500	7,500	7,545	7,500

Note: Dollar amounts in thousands.

Source: Pennsylvania Public Utility Commission. Estimates for CY 2016 by the IFO.

<sup>1</sup> Housing Affordability and Rehabilitation Enhancement Fund.

**Table 2: Well Count and Estimated Collections for 2016**

<b>Operating Year<sup>1</sup></b>	<b>Number of Wells<sup>2</sup></b>	<b>Number of Exempt Wells<sup>3</sup></b>	<b>Number of Wells Subject to Fee</b>	<b>Fee Amount<sup>4</sup></b>	<b>Estimated Collections</b>
1	503	-	503	\$45,300	\$22,800,000
2	784	6	778	35,200	27,400,000
3	1,371	18	1,353	30,200	40,600,000
4 +	<u>7,450</u>	<u>1,882</u>	<u>5,568</u>	15,100	<u>82,800,000</u>
Subtotal	10,108	1,906	8,202		173,600,000
Late/Disputed Fees					<u>1,000,000</u>
<b>Total</b>					<b>174,600,000</b>

<sup>1</sup> Wells in operating year 4 or greater are subject to the same fee amount.

<sup>2</sup> Represents the number of wells that have been spud, including both horizontal and vertical wells.

<sup>3</sup> Includes wells exempt from the fee based on production level or plugged status.

<sup>4</sup> Represents the fee for horizontal wells. The fee for vertical wells is 20 percent of the amount shown.

of (1) the annual average regional price of natural gas net of post-production costs and (2) the total production of all unconventional wells.<sup>3</sup> The ETR represents an average for all wells in operation during the year.<sup>4</sup>

The annual ETR fluctuates (increases or decreases) based on the movement of its three components: revenues, production and price. As shown in Table 3, the ETR for 2011 to 2014 decreased in each successive year. The main cause of that trend was the strong production growth through those years. For CY 2015, the ETR rose dramatically due to low prices, which caused a significant decline in market value. This factor had a stronger net effect on the ETR than the decline in revenues and continued rise in production.

For CY 2016, the ETR is estimated to be 5.0 percent, a decrease of 1.9 percentage points from CY 2015. This is due to an increase in market value (28.6 percent) coupled with a decline in revenues (-7.0 percent), which both reduce the ETR.

## Endnotes

1. Data from Pennsylvania Department of Environmental Protection's oil and gas production reports and spud well reports from 2011 to 2016 (last accessed January 18, 2017). Production data are currently available through November; December is estimated by the IFO.
2. The fee schedule is adjusted if the average price falls above or below certain thresholds, which did not occur in 2016. Pursuant to 58 Pa.C.S. §§ 2301 *et seq.*, the price used is the annual average of the settled prices for near-month contracts on the New York Mercantile Exchange.
3. The price used for this calculation is a weighted average of spot prices at the Dominion South and Leidy trading hubs for the calendar year, converted to dollars per thousand cubic feet (\$1.56 for 2016) using Pennsylvania-specific heat content, net of post-production costs (\$0.87). Prices are from BENTEK Energy. Post-production cost estimates are based on a Range Resources investor presentation from October 3, 2016, adjusted for statewide wet and dry gas production. It should be noted that many producers hedge prices for a large share of their production (e.g., futures contracts).
4. An alternative to the annual average ETR is the lifetime ETR, which is the average tax burden over the lifetime of a single new well; this measure is best used to quantify the prospective tax burden on new wells across states. (See the IFO's previous publication, [Effective Tax Rate Comparisons - Severance Taxes](#), for further information.)

**Table 3: Impact Fee Annual Effective Tax Rates**

<b>Calendar Year</b>	<b>Impact Fee Revenues</b>	<b>Unconventional Production (MMcf)<sup>1</sup></b>	<b>Price of Gas (\$/Mcf)<sup>2</sup></b>	<b>Market Value<sup>3</sup></b>	<b>Annual ETR</b>
2011	\$204,210	1,064,000	\$3.40	\$3,612,900	5.7%
2012	202,472	2,042,700	1.93	3,937,200	5.1
2013	225,752	3,102,900	2.70	8,381,100	2.7
2014	223,500	4,070,700	2.33	9,506,000	2.4
2015	187,712	4,596,900	0.59	2,722,400	6.9
2016	174,600	5,097,000	0.69	3,501,000	5.0

Note: Dollar amounts in thousands. MMcf is million cubic feet.

<sup>1</sup> Production data through November 2016. December 2016 is estimated by the IFO.

<sup>2</sup> Net of post-production costs, which were \$0.87 in 2016.

<sup>3</sup> Does not include natural gas liquids (condensate).