

2017 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) 2017, which will be remitted in April 2018.¹ 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 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. 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 less than 90 Mcf per day are exempt from the fee in any operating year.

The estimated amount of the impact fee for CY 2017 is \$219.4 million, which is \$46.1 million more 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 increase in collections are as follows:

- **Statutory fee schedule.** The schedule is based on the average annual price of natural gas on the New York Mercantile Exchange (NYMEX). Because the average annual price for natural gas eclipsed \$3.00, the impact fee schedule was adjusted upwards.² Net impact: +\$43.4 million
- **New wells offset aging wells.** The impact fee is highest in a well's first operating year, and declines as the well ages. Revenue from the 812 new wells spud offset reduced collections from (1) older wells as their fees decline and (2) newly-exempt wells as their production falls below the 90 Mcf threshold. Net impact: +\$2.7 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 sales. Therefore, this research brief computes an ETR for all wells in operation during the year.

The ETR is equal to annual impact fee revenues divided by the total market value of unconventional natural gas production. The market value is equal to the product of (1) the annual average regional price of natural gas net of post-production costs and (2) the total production from all unconventional wells.³

Table 1: Impact Fee Revenues and Distributions

	2013	2014	2015	2016	2017
Total Revenues	\$225,752	\$223,500	\$187,712	\$173,259	\$219,371
Counties, Municipalities and HARE Fund ¹	123,151	123,300	101,800	93,070	120,677
Marcellus Legacy Fund	84,601	82,200	67,867	62,046	80,451
Commonwealth Agencies	10,500	10,500	10,500	10,500	10,500
Conservation Districts/Commission	7,500	7,500	7,545	7,643	7,742

Note: Dollar amounts in thousands.

Source: Pennsylvania Public Utility Commission. Estimates for CY 2017 by the IFO.

¹ Housing Affordability and Rehabilitation Enhancement Fund.

Table 2: Well Count and Estimated Collections for 2017

<u>Operating Year</u>	<u>Number of Wells¹</u>	<u>Number of Exempt Wells²</u>	<u>Number of Wells Subject to Fee</u>	<u>Fee Amount³</u>	<u>Estimated Collections</u>
1	812	-	812	\$51,000	\$41,371,200
2	504	2	502	40,700	20,431,400
3	784	35	749	30,600	22,894,920
4 +	<u>8,825</u>	<u>2,254</u>	<u>6,571</u>	20,400	<u>133,673,040</u>
Subtotal	10,925	2,291	8,634		218,370,560
Late/Disputed Fees					<u>1,000,000</u>
Total					219,370,560

¹ Represents the number of wells that have been spud, including both horizontal and vertical wells.

² Includes wells exempt from the fee based on production level or plugged status. These wells have not been adjusted to reflect a recent case affecting exemption qualifications. The case is currently pending on appeal before the Supreme Court.

³ Represents the fee for horizontal wells. The fee for vertical wells is 20 percent of the amount shown.

The annual ETR fluctuates based on the movement of its three components: fee revenues, production and prices.⁴ For CY 2013 through CY 2017, each component has contributed to ETR changes; however, the changes could supplement or offset each other. Production has increased each year, which reduces the ETR, absent changes in the other components. Decreases in fee revenues contribute to a reduction in the ETR, while increases have the opposite effect. However, the price effect dominates the other two components as the biggest swings in the annual ETR are on account of changes in price.

For CY 2017, the ETR is estimated to be 2.9 percent, a decrease of 1.6 percentage points from CY 2016. (See Table 3.) The primary factor motivating this result is the 87 percent increase in prices for CY 2017, which counteracts the impact of higher fee revenues. This is in contrast to CY 2015 when the rate increased by 4.5 percentage points largely because of a substantial decline in prices, despite a decline in fee revenues.

Endnotes

1. Data from Pennsylvania Department of Environmental Protection's oil and gas production reports and spud well reports from 2013 to 2017 (last accessed January 25, 2018). 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. 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 (\$3.108 for CY 2017). Includes the impact of the annual adjustment for the Consumer Price Index.
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 (\$2.20 for 2017) using Pennsylvania-specific heat content, net of post-production costs (\$0.80). 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. The annual ETR represents the average rate for all wells operating in a single calendar year. A lifetime ETR, which is more appropriate for interstate comparisons, represents the average tax burden of a single well across all years of its productive life.

Table 3: Impact Fee Annual Effective Tax Rates

<u>Calendar Year</u>	<u>Impact Fee Revenues</u>	<u>Unconventional Production (MMcf)¹</u>	<u>Price of Gas (\$/Mcf)²</u>	<u>Market Value³</u>	<u>Annual ETR</u>
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	173,259	5,094,100	0.75	3,843,400	4.5
2017	219,371	5,349,500	1.40	7,480,300	2.9

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

¹ Production data through November 2017. December 2017 is estimated by the IFO.

² Net of post-production costs, which were estimated to be \$0.80 in 2017.

³ Does not include natural gas liquids (condensate).