

# Impact Fee Update and 2018 Outlook

## INTRODUCTION

Pennsylvania imposes an annual impact fee on unconventional (i.e., shale) natural gas wells that were drilled or operating in the previous calendar year.<sup>1</sup> 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. Distributions for the last four calendar years 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.

This report (1) analyzes calendar year (CY) 2017 impact fee collections (remitted in April 2018) reported by the Public Utility Commission (PUC), (2) details the number of wells and fee schedule by operating year and (3) discusses two potential scenarios for CY 2018 collections. It 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.

## 2017 IMPACT FEE REVENUES

For CY 2017, the PUC reported impact fee revenues of \$209.6 million, which is \$36.3 million more than the amount collected for the prior year. Table 2 details the well count, fee schedule and actual collections by operating year. The primary reasons for the increase in collections are as follows:

- **Fee Increase.** The fee schedule is based on the average annual price of natural gas on the New York Mercantile Exchange (NYMEX). When this price crosses certain statutorily-set thresholds, the fee schedule will increase or decrease accordingly. For 2017, the average price of natural gas surpassed \$3.00 per MMBtu on the NYMEX, causing the fee schedule to increase. For example, a horizontal well in operating year one in 2017 paid a fee that, including an inflation adjustment, was \$5,400 more than the same type of well in 2016. Net impact: +\$36.7 million.
- **Collections from New Wells.** The collections from wells in operating year one more than offset decreased collections from older wells as their fees decline. Net impact: +\$13.0 million.
- **Exempt Status and Other.** This includes (1) the net effect of reduced collections from newly-exempt wells and new collections from previously exempt wells based on production level, (2) reduced collections from wells for which exempt status was asserted based on pending litigation regarding stripper well status and (3) other outstanding payments, credits and late payments. Net impact: -\$13.4 million

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

	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
Total Revenues	\$223,500	\$187,712	\$173,259	\$209,557
Counties, Municipalities and HARE Fund <sup>1</sup>	123,300	101,800	93,070	114,784
Marcellus Legacy Fund	82,200	67,867	62,046	76,523
Commonwealth Agencies	10,500	10,500	10,500	10,500
Conservation Districts/Commission	7,500	7,545	7,643	7,750

Notes: Dollar amounts in thousands. Fees are remitted in the following April and distributed in July.

Source: Pennsylvania Public Utility Commission.

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

**Table 2: Well Count and Actual Collections for 2017**

Operating Year <sup>1</sup>	Wells Subject to Fee		Fee Amount		Actual
	Horizontal	Vertical	Horizontal	Vertical	Collections
1	808	6	\$50,700	\$10,100	\$41,026,200
2	501	4	40,500	8,100	20,322,900
3	767	2	30,400	6,100	23,329,000
4+	6,689	60	20,300	4,100	136,032,700
Subtotal	8,765	72			220,710,800
Disputed <sup>2</sup>	(294)	(25)			(6,120,700)
Other <sup>3</sup>	n.a.	n.a.			(5,032,800)
<b>Total</b>	<b>8,471</b>	<b>47</b>			<b>209,557,300</b>

Source: Pennsylvania Public Utility Commission.

<sup>1</sup> Refers to the number of years a well has been subject to the impact fee. Horizontal wells are subject to the fee for the first three years after being spud (unless they are plugged). Year 4+ includes all wells in operating years 4 through 7, which pay the same fee.

<sup>2</sup> Includes wells that disputed payment for reasons related to the pending litigation on the qualification of stripper wells.

<sup>3</sup> Includes the net impact of CY 2017 non-payments, credits and late payments from prior years.

## EFFECTIVE TAX RATE

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. Therefore, this report computes an annual average effective tax rate (ETR) for all wells in operation during the year.<sup>2</sup>

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.

The ETR computation for CY 2017 uses these data:

- Annual production of 5.4 trillion cubic feet. This figure is based on statewide well production data published by the Department of Environmental Protection (DEP).
- An annual average price of \$2.20 per Mcf, prior to the deduction of post-production costs. This price is a weighted average of spot prices at the Dominion South and Leidy trading hubs, converted to dollars per thousand cubic feet.<sup>3</sup>
- Post-production costs of \$0.80 per Mcf. This amount reflects costs for gathering, processing and transporting gas to markets. Such costs are deducted to approximate the value of gas at the wellhead, the point at which other states levy severance taxes.<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 CY 2012 to CY 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. The ETR for CY 2016 declined, as the moderate increase in market value was not enough to offset declining impact fee revenues.

For CY 2017, the ETR declined by 1.7 percentage points to 2.8 percent. This was driven by a 95.3 percent increase in the market value, which was primarily the result of an 85 percent increase in the regional hub price. The increase in the market value more than offset the increase in impact fee revenues.

## 2018 OUTLOOK

For CY 2018, two factors will have significant implications for impact fee revenues. They include:

- The statutory fee schedule. The schedule is based on the average annual price of natural gas on the New York Mercantile Exchange (NYMEX), which is based on the Henry Hub.<sup>5</sup> If that price reverts back to a level below \$3.00 per MMBtu for CY 2018, the impact fee schedule will decrease by \$5,000 per well (horizontal) compared to CY 2017 levels. For the first six months of 2018, the price has ranged

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

<u>Calendar Year</u>	<u>Impact Fee Revenues</u>	<u>Unconventional Production (MMcf)</u>	<u>Price of Gas (Mcf)<sup>1</sup></u>	<u>Market Value<sup>2</sup></u>	<u>Annual ETR</u>
2012	\$202,472	2,042,900	\$1.97	\$4,024,100	5.0%
2013	225,752	3,102,900	2.74	8,498,600	2.7
2014	223,500	4,069,100	2.38	9,690,900	2.3
2015	187,712	4,596,100	0.65	3,002,300	6.3
2016	173,259	5,094,200	0.75	3,843,500	4.5
2017	209,557	5,363,500	1.40	7,504,800	2.8

Notes: Dollar amounts in thousands. Mcf is thousand cubic feet. MMcf is million cubic feet.  
Sources: Pennsylvania Public Utility Commission, Department of Environmental Protection, Bentek Energy and the U.S. Energy Information Administration.  
<sup>1</sup> Weighted average spot price converted to dollars per Mcf using Pennsylvania heat content, net of post-production costs.  
<sup>2</sup> Market value at the wellhead. Does not include natural gas liquids (NGLs).

from \$2.64 to \$3.63, averaging \$2.90. Last year, the average price during the same time period was \$3.25. Futures prices on the NYMEX for the remainder of the year average \$2.95, for a calendar year average of \$2.93, which is below the \$3.00 threshold for a schedule adjustment. Bentek Energy forecasts that the Henry Hub spot price will average \$3.07 for the remainder of 2018. Historically, futures prices on the NYMEX converge with the Henry Hub spot price.

- The number of new wells. DEP spud data show that 411 new horizontal wells were spud from January 1 to June 26, 2018, which is 21 more wells than the prior year. Wells in their first year of operation pay the impact fee at the highest level. (See Table 2.) Revenues from new wells are important to total impact fee collections because they offset the decline in fees received from existing wells as they age. For example, a well in its first operating year for 2017 paid a fee of \$50,700 while a well in its second operating year paid \$40,500, or \$10,400 less.

Table 4 displays two potential scenarios for CY 2018 impact fee revenues. Each scenario (1) assumes that the number of new wells spud and the proportion of newly-exempt wells and previously-exempt wells that begin or resume to remit the fee will be the same as in CY 2017 and (2) disregards disputed and delinquent fees.

- The Current Fee scenario assumes no change in the current fee schedule. The scenario yields a \$14.5 million increase in impact fee collections over the prior year.

- The Fee Decrease scenario assumes an average NYMEX price that is less than \$3.00 per MMBtu and the associated decrease in the fee schedule. The scenario yields a \$30.4 million decrease in impact fee collections.

The two scenarios produce significantly different impact fee collections. The potential decrease in the fee schedule accounts for a \$44.9 million difference in collections. In addition, projected impact fee revenues are affected by the number of new wells spud; however, to a lesser extent than a change in the fee schedule due to the large number of existing wells that will continue to remit the fee. For example, if the number of new wells spud in CY 2018 deviates by +/- 10 percent from the assumed well count, impact fee revenues will increase or decrease by only \$4.1 million or \$3.7 million under the Current Fee and Fee Decrease scenarios, respectively.

For CY 2018, the projected ETRs are 2.4 percent for the Current Fee scenario and 2.0 percent for the Fee Decrease scenario. These rates are based on (1) a regional price of \$2.45 per Mcf (prior to deduction of post-production costs), (2) a projected 9.8 percent increase in production compared to the prior year and (3) the impact fee remittances projected under those scenarios.

In the long term, there are two primary factors that will affect future impact fee revenues: prices and pipeline capacity. Regional natural gas prices have stabilized over the last two calendar years, after reaching historic lows in 2015 and 2016. The regional hub price, a blended spot price between the Dominion South and Leidy hubs, has averaged \$2.42 per Mcf through June 26th. This is 22 cents more than last

**Table 4: CY 2018 Impact Fee Revenue Scenarios**

	<u>Current Fee</u>	<u>Fee Decrease</u>
<b>Total Revenues</b>	<b>\$235,210</b>	<b>\$190,317</b>
<u>Difference from 2017<sup>1</sup></u>	<u>14,499</u>	<u>(30,394)</u>
New and Existing Wells <sup>2</sup>	14,499	14,499
Lower Fee Schedule	n.a.	(44,893)

Notes: Dollar amounts in thousands. Excludes the impact of late or disputed payments.  
Source: Well counts estimated using data from the Public Utility Commission.  
<sup>1</sup> Difference from the base collections (\$221 million, shown in Table 2) before deductions related to disputes and other outstanding/late payments.  
<sup>2</sup> Reflects change in revenues from (1) more wells subject to impact fee (new wells plus non-producing wells brought into production less new stripper wells) and (2) existing wells aging and migrating down the fee schedule.

year’s calendar-year average, and nearly \$1 higher than the 2015 and 2016 levels. The NYMEX futures market suggests that prices will remain near or slightly below current levels through 2019. There are several large pipeline projects in development throughout Pennsylvania that will connect gas production from the Marcellus to major demand markets in other states. This would provide support to regional prices, motivating continued recovery and stabilization.

In recent years, regional prices have diverged dramatically from the Henry Hub price due to strong regional production gains, insufficient storage and pipeline capacity constraints. In 2018, the gap between regional prices and the Henry Hub has begun to diminish. Bentek Energy forecasts that regional prices will remain at current levels through 2019, and then moderately increase through 2021. An increase in pipeline capacity paired with recovering prices would motivate drilling activity to sustain its current level, and impact fee collections would rise accordingly. However, it is important to note that several pipeline projects in the past have been delayed or cancelled.

Another potential factor that may affect future impact fee collections is a recent decision by the Commonwealth Court of Pennsylvania regarding the qualification for stripper well status. For horizontal wells in operating year four or greater and vertical wells in any operating year, the court’s ruling implies that an unconventional gas well qualifies as a stripper well, and is exempt from the impact fee, if it does not produce more than, on average, 90 Mcf of gas per day in any one month during the calendar year.<sup>6</sup> The PUC contends that a well is subject to the fee unless its

production is below the stripper well threshold in every month of the calendar year. The Supreme Court of Pennsylvania granted the PUC’s petition for appeal on April 28, 2017, and a decision on the appeal has not been issued.

The CY 2018 impact fee scenarios outlined in Table 4 exclude the impact of the pending litigation. As noted in the analysis of the CY 2017 collections, the status of 319 horizontal and vertical wells (impact fees of \$6.1 million) was disputed. The effect on CY 2018 collections could be significant depending on the decision, if any, made by the Pennsylvania Supreme Court on the pending appeal. Up to 7,456 horizontal wells will be in operating year 4 or greater in CY 2018 (based on the 2017 count in Table 2). A decision in favor of the plaintiffs (expanded definition of stripper wells) would increase the number of wells claiming exempt status, with a corresponding impact on collections. A decision in favor of the PUC would generally continue current policy, although there may be an increase in collections if payments are remitted for previously disputed wells.

## Endnotes

1. The Pennsylvania Public Utility Commission administers the impact fee and provides data on impact fee assessments and actual collections. This was cross-referenced with unconventional well production data and spud data published monthly by the Department of Environmental Protection.
2. An alternative to the annual average ETR is the lifetime ETR, which is the average rate 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, [Analysis of Revenue Proposals in the 2018-19 Executive Budget](#), for a discussion of the lifetime and annual ETRs.)
3. Prices are from Bentek Energy, and are converted to dollars per thousand cubic feet using Pennsylvania-specific heat content.
4. Post-production cost estimates for wet and dry wells are informed by a Range Resources investor presentation.
5. See 58 Pa.C.S. § 2302(b) for the statutory adjustments and 46 Pa.B. 632 for the current fee schedule. Pursuant to 58 Pa.C.S. § 2301, the price used is the annual average of the settled prices for near-month contracts on the New York Mercantile Exchange (NYMEX) in million British thermal units (MMBtu). This is the national benchmark price for the sale of natural gas. Other regional hubs exist in Pennsylvania, e.g., Dominion South and Leidy, which are used in Table 3 to approximate the prices received by producers. The Henry Hub spot price is the price for a one-time open market transaction for near-term delivery of a specific quantity of gas from that hub.
6. See *Snyder Brothers Inc. v. Pennsylvania Public Utility Commission*, case number 1043 CD 2015, and *Pennsylvania Independent Oil and Gas Association v. Pennsylvania Public Utility Commission*, case number 55<sup>1</sup>9 CD 6459.

## Data Sources

- Statewide production data and spud well counts can be found at <https://www.paoilandgasreporting.state.pa.us/publicreports/Modules/Welcome/Welcome.aspx>.
- Act 13 impact fee revenues and distributions can be found at [http://www.puc.state.pa.us/filing\\_resources/issues\\_laws\\_regulations/act\\_13\\_impact\\_fee.aspx](http://www.puc.state.pa.us/filing_resources/issues_laws_regulations/act_13_impact_fee.aspx).

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