

# Impact Fee Update and 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 (stripper wells). 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) 2019 impact fee collections (remitted in April 2020) 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 2020 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.

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

	2016	2017	2018	2019
Total Distributions <sup>1</sup>	\$173,259	\$209,557	\$251,831	\$200,365
Counties, Municipalities and HARE Fund	93,070	114,784	140,060	109,119
Marcellus Legacy Fund	62,046	76,523	93,373	72,746
Commonwealth Agencies	10,500	10,500	10,500	10,500
Conservation Districts/Commission	7,643	7,750	7,897	8,000

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

Source: Pennsylvania Public Utility Commission.

<sup>1</sup> Distributions in 2018 include \$5.0 million in fees attributable to 2016 and 2017 that were remitted late.

## 2019 Impact Fee Revenues

For CY 2019, the PUC reported impact fee revenues were \$200.4 million, which is \$51.4 million less 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 decrease in collections are as follows:

- **Lower Fee Schedule.** The average annual price of natural gas on the New York Mercantile Exchange (NYMEX) for CY 2019 was \$2.63 per MMBtu. Due to the price dropping below \$3.00, the impact fee schedule decreased by \$5,000 per horizontal well compared to CY 2018 levels. Estimated impact: **-\$47.4 million.**
- **New and Existing Wells.** The net impact of fees from new wells offsetting lost collections from aging wells that pay lower fees. Estimated impact: **+\$9.0 million.**
- **Other.** The net impact of (1) CY 2018 remittances being overstated due to the collection of disputed and late payments from prior years, (2) late or unpaid fees for CY 2019 and (3) wells that enter or exit exempt status. Estimated impact: **-\$13.0 million.**

**Table 2: Well Count and Actual Collections for 2019**

Operating Year <sup>1</sup>	Wells Subject to Fee		Fee Amount		Collections (\$ millions)
	Horizontal	Vertical	Horizontal	Vertical	
1	618	1	\$45,700	\$9,100	\$28.3
2	764	1	35,500	7,100	27.1
3	810	0	30,400	6,100	24.6
4+	<u>7,937</u>	<u>24</u>	15,200	3,000	<u>120.7</u>
<b>Subtotal</b>	<b>10,129</b>	<b>26</b>			<b>200.7</b>
Prior Years <sup>2</sup>	--	--	--	--	0.4
Late/Unpaid <sup>3</sup>	<u>-43</u>	--	--	--	<u>-0.8</u>
<b>Total</b>	<b>10,086</b>	<b>26</b>			<b>200.4</b>

Source: Pennsylvania Public Utility Commission.

1 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 9, which pay the same fee.

2 Payments received in 2019 that should have been paid in a prior year.

3 Payments that were due for 2019 but not received in time for disbursement.

## 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 hub price of natural gas net of post-production costs and (2) the total production from all unconventional wells.

The ETR computation for CY 2019 uses these data:

- Annual production of 6.8 trillion cubic feet. This figure is based on statewide well production data published by the Department of Environmental Protection (DEP).
- An annual average hub price of \$2.18 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 based on the movement of its three components: fee revenues, production and price. As shown in **Table 3**, the ETR for CY 2014 decreased, largely due to strong production growth. For CY 2015, the ETR rose dramatically due to low prices, which caused a significant decline in market value. The ETR for CY 2016 declined as the result of a decrease in impact fee collections combined with an increase in market value. For CY 2017, the ETR declined by 1.8 percentage points driven by a 98.1 percent increase in market value, which was primarily the result of an 87.7 percent increase in the regional hub price. The increase in the market value more than offset the increase in impact fee revenues. CY 2018 is similar to CY 2017 in that the ETR declined (0.7 percentage points) due to the large increase in the regional hub price (37.2 percent) and market value (56.5 percent).

For CY 2019, the ETR decreased 0.1 percentage points from the prior year to 2.1 percent. This was due to the 20 percent decline in impact fee revenues being offset by an 18 percent decline in the market value of gas. The market value decline was due entirely to a 27 percent decline in regional prices.

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

Calendar Year	Impact Fee Revenues	Unconventional Production (MMcf)	Price of Gas (Mcf) <sup>1</sup>	Market Value <sup>2</sup>	Annual ETR
2013	\$225,752	3,102,890	\$2.74	\$8,487,900	2.7%
2014	223,500	4,069,117	2.37	9,655,100	2.3
2015	187,712	4,596,145	0.64	2,951,600	6.4
2016	173,259	5,094,118	0.73	3,722,800	4.7
2017	209,557	5,363,748	1.37	7,374,700	2.9
2018	251,831	6,123,375	1.88	11,539,600	2.2
2019	200,365	6,822,004	1.38	9,414,200	2.1

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

Source: Pennsylvania Public Utility Commission, Department of Environmental Protection, Bentek Energy and the U.S. Energy Information Administration.

1 Weighted average spot price converted to dollars per Mcf using Pennsylvania heat content, net of post-production costs.

2 Market value at the wellhead. Does not include natural gas liquids (NGLs).

## 2020 Outlook

For CY 2020, two factors will have significant implications for impact fee revenues. They include:

- **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> This price declined to \$2.63 for CY 2019, causing a fee schedule reduction and a \$47.4 million decrease in impact fee revenues. The CY 2020 monthly average price through June is \$1.83, the lowest January-June average since the impact fee's inception. Bentek Energy projects that the Henry Hub price will average \$2.34 from August to December. If the average price is below \$2.25 for the year, the fee schedule will decrease again to its lowest level.
- **Number of new wells.** DEP spud data show that 255 new horizontal wells were spud from January 1 to June 24, 2020, which is 103 (-29 percent) fewer 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 CY 2019 paid a fee of \$45,700 while a well in its second operating year paid \$35,500, or \$10,200 less.

Below are two potential scenarios for CY 2020 impact fee revenues. Each scenario assumes (1) a significant decline in new wells spud, based on the new wells drilled in the first half of the year and (2) that the proportion of existing wells that either stop paying or begin to pay the fee based on exempt status will be the same as previous years. The two scenarios are as follows:

- The **Current Fee scenario** assumes no change in the current fee schedule. The scenario yields impact fee collections of \$199.9 million, a **\$0.4 million decrease** over CY 2019. This scenario leads to flat collections, as new wells spud are nearly enough to offset lost collections from existing wells that age and pay lower fees.

- The Fee Decrease scenario assumes an average NYMEX price that is less than \$2.25 per MMBtu and the associated decrease in the fee schedule. The scenario yields impact fee collections of \$146.9 million, a **\$53.4 million decrease** over CY 2019. Based on current and projected prices, this scenario is much more likely to occur.

For CY 2020, the projected ETRs are 3.5 percent for the Current Fee scenario and 2.5 percent for the Fee Decrease scenario. These rates are based on (1) a regional price of \$1.61 per Mcf (prior to deduction of post-production costs), (2) a projected 5.0 percent increase in production compared to the prior year and (3) the impact fee remittances projected under those scenarios.

In the long term, future impact fee collections will be affected by prices, energy demand and drilling activity. After being relatively stable for two consecutive years, national and regional prices were suppressed in CY 2019 as sustained production growth outstripped record levels of natural gas demand. Prices have declined even further in 2020 as the result of natural gas demand beginning to decline due to a mild winter and the COVID-19 pandemic. The U.S. Energy Information Administration (EIA) projects that national consumption of natural gas will decline by 4 percent in CY 2020, the first annual decline since CY 2009. These market conditions have discouraged new drilling activity, and Pennsylvania production growth has been decelerating for the last several quarters. If new drilling and production growth continue to decline and/or decelerate, then prices may begin to recover. Bentek Energy projects that the price of gas at the Henry Hub will remain low for CY 2020 (\$2.05) and then begin to recover in CY 2021 (\$3.12) as demand improves and national production slows. Without significant recovery in national and regional prices, impact fee collections will remain at CY 2019 levels or move lower.

## 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. That 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 FY 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 investor presentations for several regional producers.
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.

## 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).

## Staff Acknowledgements

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