

# Impact Fee Update and Outlook



## Introduction

Pennsylvania imposes an annual impact fee on unconventional natural gas wells that were drilled or operating in the previous calendar year. The fee is administered by the Pennsylvania Public Utility Commission (PUC) and proceeds are distributed to local governments and state agencies for infrastructure, emergency services, environmental initiatives and 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 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.

	2019	2020	2021	2022
<b>Total Revenues</b>	<b>\$200.4</b>	<b>\$146.3</b>	<b>\$234.4</b>	<b>\$278.9</b>
Counties, Municipalities and HARE Fund	109.2	76.7	129.0	155.5
Marcellus Legacy Fund	72.8	51.1	86.0	103.6
Commonwealth Agencies	10.5	10.5	10.5	10.5
Conservation Districts/Commission	7.9	7.9	8.9	9.3

Note: Dollar amounts in millions. Fees are remitted in the following April and distributed in July.  
Source: Pennsylvania Public Utility Commission.

This report (1) analyzes calendar year (CY) 2022 impact fee collections (remitted in April 2023) reported by the PUC, (2) details the number of wells and fee schedule by operating year and (3) projects collections for CY 2023. It also translates the impact fee into an annual average effective tax rate (ETR) based on natural gas price and production data. The ETR quantifies the implicit tax burden imposed by the impact fee in a given year.

## 2022 Impact Fee Revenues

For CY 2022, the PUC reported impact fee revenues of \$278.9 million, \$44.4 million more than 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:

- **Higher Fee Schedule.** The average annual price of natural gas on the New York Mercantile Exchange (NYMEX) for CY 2022 was \$6.64 per MMBtu. Because the average price exceeded \$5.99, the impact fee schedule reached its highest level since the fee’s inception. The higher fee schedule also includes the statutorily required inflation adjustment (6.4%, +\$4,200 for new wells, total fee of \$69,100) due to the annual increase in wells spud. Estimated impact: **+\$32.9 million**.
- **New and Existing Wells.** The net impact of (1) collections from new wells drilled and (2) reduced collections from aging wells that pay lower fees. The increase in new wells paying the fee more than offset the impact of aging wells paying lower fees. Estimated impact: **+\$11.5 million**.

**Table 2: Well Count and Estimated Collections for 2022**

Operating Year	Wells Subject to Fee		Fee Amount		Collections (\$ millions)
	Horizontal	Vertical	Horizontal	Vertical	
1	579	0	\$69,100	\$13,800	\$40.0
2	514	0	63,200	12,600	32.5
3	466	0	57,500	11,500	26.8
4-10	5,696	11	23,000	4,600	131.1
11+	<u>4,188</u>	<u>0</u>	11,600	2,300	<u>48.6</u>
<b>Total</b>	11,443	11			<b>278.9</b>

Note: Operating year 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).

Source: Pennsylvania Public Utility Commission.

## 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. This report computes an annual average effective tax rate (ETR) for all wells in operation during the year.<sup>1</sup> The ETR is equal to annual impact fee revenues divided by the total market value of unconventional natural gas production valued at the wellhead. 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) total production from all unconventional wells.

The ETR computation for CY 2022 uses these data:

- Annual production of 7.4 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 \$5.73 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>2</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>3</sup>

The annual ETR fluctuates based on the movement of its three components: fee revenues, production and price. As shown in **Table 3** (next page), the ETR was relatively stable from CY 2018 to CY 2019, as a 20% reduction in fee revenues was offset by a 19% decline in the market value of gas. For CY 2020, the ETR increased by 1.2 percentage points. This was entirely attributable to the substantial year-over-year reduction in market value (-52%), which more than offset the decrease in collections (-27%). The decline in market value was driven by a 54% reduction in the average price and relatively weak production growth. These trends were largely the result of the market impacts from the COVID-19 pandemic and related mitigation efforts.

For CY 2021, the ETR declined by 2.0 percentage points. This was due to a 295% increase in the market value of gas over the prior year, which outpaced the increase in impact fee collections (+60%). The significant increase in market value was largely driven by a 270% increase in the regional price of natural gas. For CY 2022, the ETR declined further due to another significant increase in the market value of gas (+107%). This increase was entirely due to price growth, as unconventional production declined for the year. The ETR for CY 2022 is the lowest since the inception of the fee.

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

Calendar Year	Impact Fee Revenues	Unconventional Production (Bcf) <sup>1</sup>	Price of Gas (Mcf) <sup>2</sup>	Market Value <sup>3</sup>	Annual ETR
2018	\$251.8	6,123	\$1.89	\$11,554	2.2%
2019	200.4	6,821	1.38	9,399	2.1
2020	146.3	7,092	0.63	4,479	3.3
2021	234.4	7,574	2.34	17,702	1.3
2022	278.9	7,442	4.93	36,665	0.8

Note: Fees are remitted in the following April and distributed in July. Millions of dollars.

1 Production data from DEP. Bcf is billion cubic feet.

2 Weighted average of spot prices at major PA hubs. Net of post-production costs, assumed to be \$0.80 per mcf based on investor presentations for several regional producers.

3 Does not include natural gas liquids. Millions of dollars.

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

## 2023 Outlook

For CY 2023, 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 NYMEX, which is based on the Henry Hub.<sup>4</sup> This price increased to \$6.64 for CY 2022, the highest annual average since the impact fee's inception, causing a fee schedule increase and a \$32.9 million gain in revenues. The CY 2023 monthly average price through June is \$2.76, a 55% decrease from the same period in CY 2022. Contract prices as of June 26, 2023 suggest that the Henry Hub price will average \$2.90 from July to December. If that projection holds, then the average annual price will be \$2.85 and the impact fee schedule will decrease significantly. At that level, horizontal wells in operating year one would pay a fee of \$51,800 per well, a reduction of \$17,300 (-25%) from CY 2022. For wells in operating years two and three, fees would decline by \$23,000 (-36%) per well.
- **Number of new wells.** DEP spud data show that 208 new horizontal wells were spud from January 1 to June 26, 2023, 60 (-22%) fewer wells than the same period in 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 2022 paid a fee of \$69,100 while a well in its second operating year paid \$63,200, or \$5,900 less.

Based on (1) a projected NYMEX annual average price of \$2.85 and (2) an assumed 20% decline in new wells spud, impact fee revenues for CY 2023 are estimated to range from \$180 million to \$185 million, a reduction of \$94 million to \$99 million from the prior year, and the largest year-over-year decline since the fee's inception.

## Endnotes

1. An alternative to the annual average ETR is the lifetime ETR, which is the average tax 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 *Analysis of Revenue Proposals in the FY 2018-19 Executive Budget*, for a discussion of the lifetime and annual ETRs.)
2. Prices are from Bentek Energy and are converted to dollars per thousand cubic feet using Pennsylvania-specific heat content. The analysis disregards hedging contracts and assumes that the average spot price is representative of prices received by producers.
3. Post-production cost estimates are informed by investor presentations for several regional producers.
4. 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.

## Staff Acknowledgements

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