

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.

Table 1: Impact Fee Revenue and Distributions

	2018	2019	2020	2021
Total Distributions	\$251.8	\$200.4	\$146.3	\$234.4
Counties, Municipalities and HARE Fund	140.1	109.2	76.7	129.0
Marcellus Legacy Fund	93.4	72.8	51.1	86.0
Commonwealth Agencies	10.5	10.5	10.5	10.5
Conservation Districts/Commission	7.9	7.9	7.9	8.9

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) 2021 impact fee collections (remitted in April 2022) reported by the PUC, (2) details the number of wells and fee schedule by operating year and (3) discusses two potential scenarios for CY 2022 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.

2021 Impact Fee Revenues

For CY 2021, the PUC reported impact fee revenues were \$234.4 million, which is \$88.2 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:

- **Higher Fee Schedule.** The average annual price of natural gas on the New York Mercantile Exchange (NYMEX) for CY 2021 was \$3.84 per MMBtu. Due to the price being between \$3.00 and \$4.99, the impact fee schedule increased by \$10,000 for most horizontal wells compared to CY 2020 levels. The higher fee schedule also includes the statutorily required inflationary adjustment (6.6%, \$3,300 for new wells) due to the annual increase in wells spud. Estimated impact: **+\$99.8 million.**
- **New and Existing Wells.** The net impact of (1) reduced collections from aging wells that pay lower fees and wells that become exempt offsetting fees from new wells and (2) any payments related to prior years. The net impact for CY 2021 is largely driven by 3,160 wells that entered operating year 11 and paid half the fee amount paid in operating year 10. Estimated impact: **-\$11.6 million.**

Table 2: Well Count and Actual Collections for 2021

Operating Year ¹	Wells Subject to Fee		Fee Amount		Collections (\$ millions)
	Horizontal	Vertical	Horizontal	Vertical	
1	514	0	\$54,000	\$10,900	\$27.8
2	475	0	43,200	8,600	20.5
3	618	1	32,400	6,500	20.0
4-10	6,205	22	21,600	4,400	134.1
11	<u>3,160</u>	<u>0</u>	10,900	2,100	<u>34.4</u>
Subtotal	10,972	23			236.9
Adjustments ²	<u>-112</u>	<u>-2</u>	--	--	<u>-2.4</u>
Total	10,860	21	--	--	234.4

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).

2 Includes the net impact of (1) producers who did not remit payment due to bankruptcy, (2) an adjustment for interest erroneously distributed in a prior year and (3) 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.¹ 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 2021 uses these data:

- Annual production of 7.6 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 \$3.14 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.²
- 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.³

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 for CY 2015 rose dramatically due to low prices, which caused a significant decline in market value. From CY 2015 to CY 2019, the ETR declined by over 4.0 percentage points as the market value of gas increased by nearly 224%, which outpaced the growth in impact fee collections during the same period. The significant growth in market value was driven by strong growth in both prices and production during the period.

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 estimated ETR declined by 2.0 percentage points to its lowest level since the inception of the impact fee. 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.

Table 3: Impact Fee Annual Effective Tax Rates

Calendar Year	Impact Fee Revenues	Unconventional Production (Bcf) ¹	Price of Gas (Mcf) ²	Market Value ³	Annual ETR
2015	\$187.7	4,596	\$0.63	\$2,906	6.4%
2016	173.3	5,096	0.73	3,727	4.7
2017	209.6	5,364	1.37	7,351	2.9
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

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

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

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.

2022 Outlook

For CY 2022, 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.⁴ This price increased to \$3.84 for CY 2021, the highest annual average since CY 2014, causing a fee schedule increase and a \$99.8 million gain in revenues. The CY 2022 monthly average price through June is \$6.06, a 119% increase from the same period in 2021. Bentek Energy projects that the Henry Hub price will average \$7.36 from July to December. If that projection holds, then the average annual price will be \$6.71 and the fee schedule will increase to the highest possible level. At that level, horizontal wells in operating year one would pay a fee of \$64,900 per well. Horizontal wells in operating years two and three would pay \$59,400 and \$54,000 per well, respectively. Horizontal wells in operating years 4 or higher would pay the same fee.
- Number of new wells.** DEP spud data show that 251 new horizontal wells were spud from January 1 to June 14, 2022, which is 24 (11%) more wells than the same time 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 2021 paid a fee of \$54,000 while a well in its second operating year paid \$43,200, or \$10,800 less.

Below are two potential scenarios for CY 2022 impact fee revenues. Both scenarios assume that (1) the number of new wells spud is the same as CY 2021 (based on new wells drilled in the first half of the year) and (2) the proportion of existing wells that either stop paying or become subject to the fee based on a change in exempt status will be the same as previous years.

- Scenario 1 assumes an average NYMEX price that is \$6.00 or higher and the associated increase in the fee schedule. The scenario yields impact fee collections of \$258.7 million, a **\$24.3 million increase** over CY 2021 and the largest collections amount on record. Based on current and projected prices, this scenario is more likely.
- Scenario 2 assumes an average NYMEX price between \$5.00 and \$5.99 per MMBtu and the associated increase in the fee schedule. The scenario yields impact fee collections of \$245.3 million, a **\$10.8 million increase** over CY 2021. Based on the current market and projections, this scenario is unlikely.

For CY 2022, the projected ETR for both scenarios is 0.6%. This rate is based on (1) a regional price of \$6.06 per Mcf (prior to deduction of post-production costs), (2) flat production growth and (3) impact fee remittances projected under those scenarios.

Endnotes

1. 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 *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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