

Effective Tax Rate Comparisons – Severance Taxes

An effective tax rate is useful when comparing state severance taxes because it incorporates not only the statutory tax rate, but also the impact of any special provisions on tax liability. This document provides a description of two possible effective tax rates and some related definitions.

Statutory Tax Rate – The rate of tax specified in the statute that authorizes or levies the tax. For severance taxes imposed on natural gas, the statutory tax rate is applied to one (or both) of the following tax bases:

- Value. The rate is expressed as a percentage of the market value of gas extracted.
- Volume. The rate is expressed in cents per thousand cubic feet (Mcf) of gas extracted.

Special Provisions – State severance taxes often contain special provisions that reduce the tax paid in various circumstances. Examples of special provisions include:

- Reduced tax rates. Some states levy a lower tax rate for the first two to four years that a well is in operation. Other states may levy a lower tax rate until the value of the gas extracted from the well exceeds the drilling cost.
- Exemptions. Certain wells may be exempt from tax based on the level of production. The most common type of exemption is for “stripper” wells (production falls below a specified level).

Effective Tax Rate – The rate of tax after all statutory rates and special provisions are taken into account. For severance taxes, the effective tax rate is equal to: taxes paid ÷ market value of gas. There are two ways to measure the effective tax rate. The appropriate measure will depend upon the specific policy question to be addressed.

- Annual tax rate. The average rate for a *single year* across *all wells* that produce gas. This measure is best used to quantify *historical* tax burdens for existing wells.
- Lifetime tax rate. The average rate over *all future years* for a *single, new well*. (Wells are generally assumed to produce for 30 years.) This measure is best used to quantify the tax burden on *new* wells.

The annual tax rate for a state may change from year to year based on the share of total production that happens to qualify for special provisions during the year. Although the annual rate can be tracked over time for a state, the measure is less meaningful for interstate comparisons because it does not hold the volume or composition of production constant across states.

The lifetime tax rate compares the same well across states, so price and production profiles are the same. The measure is useful for interstate tax comparisons because the age of the well and volume of production are the same across all states. Therefore, the relative impact of more favorable special provisions can be quantified. The measure is also prospective: it reflects current technology and current prices.

Statutory and Lifetime Effective Severance Tax Rates for 2014 – State Taxes Only

State	Statutory Rate	Major Special Provisions ¹	ETR ²	
			Low/Low	High/High
Pennsylvania	Fee	None	1.6%	0.6%
Arkansas	5.0%	Reduced rate for high-cost wells	3.2	3.6
Colorado	5.0%	Credit for local property taxes on gas	4.5	4.8
Louisiana ⁴	11.8¢	2 year exemption for horizontal wells	2.6	3.3
Michigan ⁵	5.0%	None	5.9	5.9
North Dakota ⁴	8.33¢	None	2.5	2.3
Ohio ⁴	2.5¢	None	0.8	0.6
Oklahoma	7.0%	Reduced rate for horizontal wells	3.9	3.9
Texas	7.5%	Reduced rate for high-cost wells	3.7	3.7
West Virginia ⁶	5.0%	None	5.8	5.7

¹ Pennsylvania, Colorado, Louisiana, West Virginia and Texas all have exemptions for low-producing (stripper) wells.
² Effective tax rate. Low production and low price scenario.
³ Effective tax rate. High production and high price scenario.
⁴ Levies a volume-based tax (imposed per Mcf). Louisiana's tax rate is adjusted annually based on natural gas prices.
⁵ Also levies a fee not to exceed 1% of market value. The effective tax rate includes the fee.
⁶ Also levies a volume-based tax of 4.7¢ per Mcf. The effective tax rate includes this tax.

Pennsylvania Impact Fee – Annual Effective Tax Rate

The Pennsylvania impact fee is unique because it generally does not respond to prices or production. Over time, the annual effective tax rate has declined dramatically due to higher production and prices, which increase the market value of gas extracted. The table displays historical annual effective tax rates for 2011 to 2013 and a hypothetical for 2014 if production levels and impact fee collections remain constant. Preliminary price data for 2014 suggest a significant increase in natural gas prices.

Annual Effective Tax Rates for the Pennsylvania Impact Fee

Year	Impact Fee Collections ¹	Unconventional Production (Mcf) ²	Price (\$/Mcf) ³	Market Value	Annual ETR
2011	\$204,210,000	1,068,288,000	\$3.47	\$3,709,096,000	5.5%
2012	202,472,000	2,042,632,000	2.11	4,316,592,000	4.7
2013 ⁴	224,500,000	3,093,868,000	2.98	9,219,725,000	2.4
2014 ⁵	224,500,000	3,093,868,000	3.77	11,661,406,000	1.9

¹ Impact fee collections and distributions for 2011 and 2012 can be found at the Public Utility Commission website at <https://www.act13-reporting.puc.pa.gov/Modules/PublicReporting/Overview.aspx>.
² Unconventional production data from shale gas wells for 2011 and 2012 are compiled by the U.S. Energy Information Administration at http://www.eia.gov/dnav/ng/ng_prod_sum_dcu_spa_a.htm. 2013 is based on preliminary data from the Department of Environmental Protection.
³ The natural gas price forecast is based on the U.S. Energy Information Administration's Henry Hub spot price forecast with adjustments to remove post-production costs (i.e., gathering and transportation).
⁴ Impact fee collections were updated on April 4, 2014 based on data released by the Pennsylvania Public Utility Commission for reporting year 2013.
⁵ The computation for 2014 holds impact fee collections and production levels constant from the 2013 levels to illustrate the impact from higher prices. It is not an estimate for 2014. With higher production, the effective tax rate would be lower.