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Major Tax Responsibilities of Coal and Natural Gas Producers in Wyoming and West Virginia

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Overview

This policy memo responds to questions raised by the West Virginia Senate Economic Development Committee regarding the taxation of coal and natural gas producers in West Virginia and Wyoming. The aim is to provide a comparison of the major taxes imposed in West Virginia and Wyoming on coal and natural gas producers and to estimate the overall average effective tax rate for each industry. The estimates provided are based on gross production value of coal and natural gas and taxes collected in calendar year 2008. The major taxes examined are the severance, property, corporate income, sales and use, and several additional taxes unique to each state. The estimates provided do not include licenses, fees, bonds, or permits.

In addition to examining the taxes paid and the average effective tax rates of coal and natural gas producers, the memo also provides two separate appendices. The first appendix outlines the methodology used in this paper for the tax estimates provided, while the second examines a hypothetical scenario of replacing West Virginia's property tax scheme with Wyoming's county gross productions tax.

Summary Findings:

- **In 2008, Wyoming collected approximately $2.1 billion in taxes from coal and natural gas producers, compared to $787 million in West Virginia.**
- **Wyoming's average effective tax rate on coal producers was 10.6 percent, compared to 6.5 percent in West Virginia.**
- **The average effective tax rate on natural gas producers was 10.2 percent in Wyoming and 8.2 percent in West Virginia.**
- **The average property tax rate for coal and natural producers in Wyoming was 4.8 percent for each industry, while the average property tax rate for natural gas was three percent and one percent for coal in West Virginia.**
- **If West Virginia replaced its real and personal property tax scheme with Wyoming's county gross production tax, it would have raised an additional $115 million in 2008.**

Table 1 compares the amount of state and local taxes paid by coal and natural gas producers in West Virginia and Wyoming in 2008. For each state, the estimated gross production value is followed by estimates of tax liabilities for sales and use, corporate income, severance, property, and several other major taxes unique to each state. Following the estimated tax liabilities is the average effective tax rate for each tax imposed. The effective tax rate is the estimated taxes paid as a share of total estimated production value. The effective tax rate accounts for the differences between state and local tax structures, including each state's unique tax exemptions, deductions, and credits. Thus, it allows for a more accurate direct comparison of the overall tax responsibility faced by coal and natural gas producers in each state than comparing statutory (nominal) tax rates. The final column in **Table 1** shows the total estimated taxes paid on the value of coal and natural gas production and the overall average effective tax rate for each industry.

Coal

The total production value of coal in Wyoming is almost half of what it is in West Virginia, $5.2 billion compared to $9.7 billion. Despite this difference, coal producers in Wyoming paid only about $80 million less in taxes, or an estimated $546 million compared to $626.5 million in West Virginia. The average effective tax rate on coal producers in Wyoming was an estimated 10.6 percent ($10.60 on each $100 of coal production), compared to just 6.5 percent in West Virginia. If West Virginia had the same average tax rate on coal production as Wyoming in 2008, the state would have collected an additional $402 million in tax revenue.

The discrepancy in average effective tax rates is largely due to the differences in how the two states tax coal at the local level. While West Virginia taxes the real and personal property of coal producers and owners, Wyoming local governments levy an ad valorem property tax based on the total taxable value of gross production in the county in addition to a personal property tax on coal producers. Wyoming local governments collected an estimated $246.2 million in property taxes from coal producers, compared to just $90.8 million in West Virginia. The average property tax rate imposed on coal production in West Virginia was less than one percent, while the average rate in Wyoming was nearly five percent.

In addition to collecting a large share of property tax revenue, Wyoming also collected a much larger amount of sales and use taxes. This is largely because Wyoming, unlike West Virginia, does not have a blanket direct use sales and use tax exemption for purchases made by natural resource producers. According to one study, this exemption amounted to an estimated $82.5 million in forgone revenue in West Virginia (FY 2009).[1]

Natural Gas

Unlike coal, the production value of natural gas in Wyoming is nearly 8 times larger than it is in West Virginia. In 2008, Wyoming natural gas producers paid an estimated $1.6 billion in state and local taxes, while natural gas producers in West Virginia paid only $161.2 million. Despite the huge gulf between the value of natural gas production in each state, Wyoming imposed a greater tax liability. The average tax responsibility on Wyoming natural gas production was 10.2 percent, while West Virginia was 8.2 percent. If West Virginia had the same average effective tax rate on natural gas production as Wyoming, the state would have collected an additional $40 million in estimated tax revenue in 2008.

Wyoming has a higher average effective tax rate on natural gas production largely because of the differences in how the state levies property and sales and use taxes. Unlike West Virginia that levies a tax on real and personal property on natural gas reserves and production, Wyoming levies the same ad valorem property tax on production value as it does with coal (**see Appendix 1**). In 2008, the estimated average effective property tax rate on natural gas producers in Wyoming was 4.8 percent – compared to less than three percent in West Virginia.

Wyoming's tax liability is also higher on natural gas production because the state levies a three percent sales tax on natural gas sold in the state. Similar to coal production, Wyoming also does not have blanket sales and use tax exemption for purchases made by the natural gas industry.

Table 1
Coal and Natural Gas Taxation, West Virginia and Wyoming 2008 (in millions)

	Coal		Natural Gas	
	W.Va.	**WY**	**W.Va.**	**WY**
Production Value	$9,705.3	$5,173.8	$1,964.7	$15,488.3
Sales & Use Tax	$4.0	$38.1	$0.8	$114.3
Effective rate	0.04%	0.74%	0.04%	0.74%
Corporate Income Tax	$25.6	-	$5.1	-
Effective rate	0.26%	-	0.26%	-
Severance Tax	$412.5	$261.6	$86.4	$720.2
Effective rate	4.25%	5.06%	4.40%	4.65%
Property Tax	$90.8	$246.2	$58.3	$745.3
Effective rate	0.94%	4.76%	2.97%	4.81%
Workers' Comp Tax	$80.0	-	$10.5	-
Special Reclamation Tax	$13.6	-	-	-
Conservation Tax	-	-	-	$6.80
Total Taxes Paid	$626.5	$545.9	$161.2	$1,586.6
Overall Effective Rate	6.5%	10.6%	8.2%	10.2%

Sources: West Virginia State Tax Department; Wyoming Department of Revenue; Wyoming Legislative Service Office; West Virginia University Bureau of Business and Economic Research, and Marshall University Center for Business and Economic Research, "The West Virginia Coal Economy, 2008," February 2010; West Virginia University Bureau of Business and Economic Research, "The Economic Impact of the Natural Gas Industry and the Marcellus Shale Development in West Virginia in 2009," December 2010; Wyoming Mining Association; Petroleum Association of Wyoming; and the U.S. Bureau of Economic Analysis.
*Includes revenue from the business franchise tax.
**Wyoming does not have a real or personal property tax on natural gas, and only a small personal property tax on coal. Instead, Wyoming has an ad valorem property tax on coal and natural gas production called the 'county gross production tax.'

Other Major Sources of Revenue

Unlike West Virginia where almost all coal and natural gas production takes place on privately owned land, almost all mineral production in Wyoming takes place on federal or state land. (According to the Wyoming Legislative Service Office, 75.3 percent of natural gas and 87.3 percent of coal produced in the state was on federal land in 2009.[2]) The Mineral Managements Service (MMS), a bureau of the U.S. Department of Interior, collects royalties on mineral production taken from federal land in Wyoming and other states. In general, MMS shares 50 percent of the Federal Mineral Royalties (FMRs) with states, less a small deduction for "net receipts sharing."[3]

In FY 2008, Wyoming received over $1 billion in total federal mineral royalties.[4] Of that amount, the coal industry accounted for approximately $268 million in federal royalties to the state of Wyoming, while the gas industry paid approximately $591 million. Wyoming also received $220 million from coal lease bonus payments and rents. In contrast very little mineral production in West Virginia occurs on federal land. In FY 2008, a little more than $1 million was paid in federal royalties for natural gas production in West Virginia, and none for coal production.

The land ownership differences (public vs. private) between the two states also impact the production costs in each state, especially for coal. For example, the royalty rate on coal and natural gas production is 12.5 percent on federal land and an average of 16.67 percent on state land in Wyoming. In West Virginia, the average royalty rate for coal production is 5.5 percent, while the average royalty rate for natural gas production is typically 12.5 percent.[5] In some recent cases, natural gas companies have paid anywhere from 16% to 22%.

Wyoming also received additional revenue from its Permanent Mineral Trust Fund, which, since the late

1970s, has received a portion of oil, natural gas, and coal severances taxes. In FY 2008, the state's general revenue received $321.4 million from the interest income earned from the permanent mineral trust fund.[6] As of April 30, 2011, the balance of the fund was $5.4 billion. West Virginia does not have a permanent mineral trust fund.

Conclusion

Overall, the average tax liability on coal and natural gas production is higher in Wyoming than West Virginia. This is largely due to the much higher average property tax rate in Wyoming. This is especially true for coal production in West Virginia, which taxes coal property at almost one-fifth the rate as Wyoming. If West Virginia adopted a similar ad valorem production tax as Wyoming, the state would have collected an estimated $155 million more in revenue for local governments (see **Appendix 3**). Differences in average sales and use tax rates are also profound between the two states. Unlike West Virginia that exempts a good portion of direct purchases made by coal and natural gas companies, Wyoming does not. Wyoming also imposes a sales tax on the sale of natural gas, while West Virginia does not.

Another large discrepancy found was the higher average tax rate of natural gas production compared to coal production in West Virginia. Overall, natural gas producers had an average tax rate of 8.2 percent compared to 6.5 percent for coal producers. This is largely attributed to differences in average property tax rates. Natural gas producers in West Virginia pay about three percent of their gross production value in taxes while coal producers pay a little less than one percent. This could be attributed to the different ways that coal and natural gas property is assessed and taxed in the state.[7]

For example, unlike coal, active oil and gas property is appraised and assessed on both the royalty land-owner and the producer. Currently, active coal being mined in West Virginia is taxed based upon the royalty rate (5.5%) value of the property and does not include the 'chattel real interest' or the leaseholders (coal producer) personal property interest. This means a large portion – perhaps 94 percent - of the value of active coal property is not being assessed, which results in lower property tax revenues.

Appendix 1 – Methodology and Sources

Calculating Production Value

There are two central ways to calculate the gross production value of natural gas and coal production in West Virginia and Wyoming. One method is to multiply the unit of taxable valuation by the average price per unit. For coal, this would be multiplying the annual tonnage by the average annual in-state price per ton. For natural gas, this would be multiplying the gross sales unit by the average annual wellhead in-state price. An alternative method is dividing the effective severance rate given for natural gas and coal by the severance tax revenue collected. The severance tax rate in Wyoming and West Virginia applies to the total market value of each taxable unit, so dividing each state's severance tax revenue by its effective severance tax rate is a good estimate of the gross production value for both coal and natural gas.

Table 1 illustrates that using either method for calculating the gross production value of coal does not significantly alter the average tax rate of coal production in either state. **Table 2** calculates the gross production value of natural gas in Wyoming using the same method as in **Table 1**. It shows that both methods resulted in similar production values, and, therefore, similar average tax rates. Unfortunately, it is not possible to calculate the gross production value of natural gas in West Virginia because the average wellhead price is not published information. For this reason, this paper uses each state's effective severance tax rate divided by its severance tax collection to arrive at estimated gross production value.

Appendix 1: Table 1

Calculating 2008 Gross Production Value for Coal

	Wyoming	West Virginia
Short Tons	467,644,000	157,778,000
Average Sales Price Per Ton	$11.39	$60.16
Gross Production Value Method #1	$5,326,465,160.00	$9,491,924,480.00
Severance Taxes	$261,614,042	$412,475,711
Effective Severance Tax Rates	5.06%	4.25%
Gross Production Value Method #2	$5,170,237,984.19	$9,705,310,847.06
Total Coal Taxes Paid	$545,900,000	$626,500,000
Average Tax Rate Using Method #1	10.2%	6.6%
Average Tax Rate Using Method #2	10.6%	6.5%

Source: U.S. Energy Information Administration, Annual Coal Report 2009; WV State Tax Department; Wyoming Department of Revenue, 2009 Annual Report; and Wyoming Legislative Service Office. Note: The effective severance rate for West Virginia coal production was found by adding the estimated $4.0 million in credits and $68.7 million low-seam benefits received due to the reduced severance tax on underground this seam coal production.

Appendix 1: Table 2

Calculating 2008 Gross Production Value, Natural Gas

	Wyoming	West Virginia
Marketed Production - Million Cubic Feet	2,274,850	244,880
Average Wellhead Price - Thousand Cubic Feet	$6.86	N/A
Gross Production Value Method #1	$15,605,471,000	N/A
Severance Taxes	$720,207,059	$86,446,855
Effective Severance Tax Rates	4.65%	4.40%
Gross Production Value Method #2	$15,488,323,849	$1,964,701,250
Total natural Gas Taxes Paid	$1,586,647,286	$161,266,728
Average Tax Rate Using Method #1	10.2%	N/A
Average Tax Rate Using Method #2	10.2%	8.2%

Source: U.S. Energy Information Administration, Annual Natural Gas Report 2008; WV State Tax Department; and Wyoming Department of Revenue, 2009 Annual Report.

Sales and Use Taxes

The state of Wyoming levies a sales and use tax of four percent, while local governments have the option of levying a sales tax up to three percent upon voter approval.[8] In 2008, the combined state and county average sales and use tax rate was 5.2 percent.[9] In West Virginia, the state sales and use tax is five percent. No counties in West Virginia have an optional sales tax. Beginning January 1, 2012, the city of Huntington, West Virginia began imposing sales tax of one percent.

Appendix 1: Table 3

2008 Mineral Production Value: Wyoming and West Virginia

	Severance Tax Collections	Effective Severance Tax Rates	Production Value	Share of Total Production Value
Wyoming				
Coal	$261.6	5.06%	$5,173.8	20.6%
Oil	$153.4	5.06%	$3,003.3	12.1%
Natural Gas	$720.2	4.65%	$15,488.3	61.6%
Other*	$19.6	1.38%	$1,428.1	5.70%
Total	$1,154.8	4.60%	$25,123.5	100.0%
West Virginia				
Coal	$412.5	4.25%	$9,705.3	81.8%
Oil	$6.6	4.40%	$149.1	1.3%
Natural Gas	$86.5	4.40%	$1,964.7	16.6%
Other**	$1.9	4.40%	$44.3	0.4%
Total	$507.5	4.28%	$11,863.4	100.00%

Sources: Wyoming Legislative Service Office, Wyoming Department of Revenue, and West Virginia Department of Revenue. **Note:** For West Virginia Oil and "Other" effective severance tax rates, authors assumed the same effective rate for natural gas.

*Includes Trona, Uranium, Moss Rock, Sodium Sulphate, Shale, Sand & Gravel, Limestone, Leonardite, Gypsum, Granite Ballast, Feldspar, Decorative Stone, Clay, and Bentonite..

**Includes Sand, Gravel, Limestone, Sandstone, Waste Coal, and "other Natural Resources."

Appendix 1: Table 4

Sales and Use Taxes Levied on Wyoming and West Virginia Minerals in 2008 (in millions)

	Share of Production Value	Sales & Use Taxes
Wyoming		
Coal	20.6%	$38.2
Oil	12.1%	$22.4
Natural Gas	61.6%	$114.3
Other	5.7%	$10.5
Total	100.0%	$185.4
West Virginia		
Coal	81.8%	$4.0
Oil	1.3%	$0.06
Natural Gas	16.6%	$0.8
Other	0.4%	$0.02
Total	100.0%	$4.9

Sources: Wyoming Department of Revenue (Aggregate Sales and Use Tax Collections by Major Industry FY 2008 and FY 2009) and "The West Virginia Coal Economy, 2008," West Virginia University Bureau of Business and Economic Research and Marshall University Center for Business and Economic Research, February 2010.

According to a February 2010 report prepared by West Virginia University (BBER) and Marshall University (CBER) titled "West Virginia Coal Economy 2008," coal companies paid an estimated $3.6 million in sales and use taxes in 2008. The method for calculating total sales and use taxes paid by the coal industry was found by using the "2008 sales and use taxes collected from all self-classified mining firms, including oil and gas miners, multiplied by the approximate percentage of coal-related mining relative to total mining of 73.6%." Dividing the 73.6 percent from the estimated $3.6 million paid in sales and use taxes from the coal mining industry yields an estimated total of $4.9 million in total mining sales and uses taxes collected in 2008.[10] It is unclear how the BBER/CBER report concluded that 73.6 percent of total mining value was related to the coal industry in 2008. However, by multiplying coal's share of 2008 West Virginia mineral production value (**see Appendix Table 3 and 4**) of 81.8 percent to the estimated $4.9 million in of total mining sales and use collections it yields an estimated **$4.0 million**. This is approximately $400,000 more than the WVU/BBER estimate.

According to the Wyoming Department of Revenue, mining companies collected $182.6 million sales and use taxes in FY 2008 and $188.1 million in FY 2009.[11] Because six months of tax (calendar) year 2008 is included in both FY 2008 and FY 2009 in Wyoming, an average of these two fiscal years was used – which is $185.4 million. Total taxable production value of mining in Wyoming was $25.1 billion in 2008 (**see Appendix Table 1**). Of this amount, coal mining accounted for 20.6 percent or $5.2 billion.[12] Using these estimates, coal paid an estimated **$38.2 million** in sales and uses taxes in 2008. This estimate is slightly higher than the $34.6 million estimated by the Wyoming Mining Association.[13]

According to BBER/CBER report, the total estimated sales and use taxes levied on all mining industries was $4.9 million in 2008. In 2008, natural gas accounted for approximately 16.6 percent of total production value (**see Appendix Table 3 and 4**). Multiplying 16.6 percent of the estimated $4.9 million in total sales and use taxes levied on mining companied yields an estimated of **$811,000** paid by the natural gas sector.

The natural gas industry in Wyoming accounted for approximately 61.6 percent (**see Appendix Table 3 and 4**) of total mineral production value in 2008. Multiplying this share by the estimated $185.4 million in total sales and use taxes collected, natural has paid an estimated $114.3 million of the total mining sales and use tax collected in 2008.

One reason why West Virginia collects relatively less in sales and use taxes from coal mining companies is due to the high level of tax exemptions that apply to the industry. For example, West Virginia has a natural resource production direct use exemption that applies to "purchases for exploring, developing, severing, extracting, and loading for shipment any natural resource product for sale, profit, or commercial use. Reclamation, waste disposal or environmental activities are also included in the exemption."[14] In Wyoming, many of these purchases are not exempt from the state sales and use tax. [15]

Corporate Net Income

Coal and natural gas companies in West Virginia are subject to the state's corporate net income tax. In 2008, the corporate net income tax rate was 8.75 percent of taxable income. Legislation has since lowered the rate to 7.75 percent, and the rate is expected to drop to 6.5 percent by 2014. West Virginia has a number of tax exemptions, deductions, and credits that can be applied against the corporate net income tax.

According to the 2010 BBER/CBER report, **$25.6 million** in corporate net income tax revenue was collected from coal mining activity for 2008, a figure obtained from the State Tax Department.[16]

Corporate net income taxes attributable to oil and gas production were estimated by multiplying West Virginia's proportion of gross operating surplus resulting from oil and gas extraction by the amount of corporate net income taxes collected in calendar year 2008. West Virginia's gross operating surplus was taken from the Bureau of Economic Analysis, while the amount of corporate net income taxes collected was taken from the state's monthly revenue reports. According to this estimate, the oil and gas extraction industry paid **$5.1 million** in corporate net income taxes in 2008. Using this method of estimating, the mining (except oil and gas extraction) industry, which in West Virginia is predominantly coal, paid $26.4 million in corporate net income taxes in 2008, approximately the same amount as paid by the coal industry according to the BBER report.

Note: Both the figure reported for coal mining from the BBER report and the estimate for the oil and gas extraction include revenue from the business franchise tax.

Wyoming does not have a corporate net income tax.

Severance

A severance tax is applied to mineral production in both West Virginia and Wyoming. In both states the tax is applied to the production market value of the mineral.

In West Virginia, the base severance tax rate on coal and natural gas production is five percent. For coal, there is a reduced rate for thin seam coal production. This rate is two percent for coal produced from a seam between 37 inches and 45 inches thick, and the rate is one percent for coal produced from a seam less than 37 inches thick. There are no reduced rates for natural gas.[17]

According to the West Virginia State Tax Department, in calendar year 2008, the severance tax on coal production yielded **$412.5 million**, and the severance tax on natural gas production yielded $86.4 million.[18]

In Wyoming, the severance tax rate on surface coal mining in seven percent, and the rate on underground coal mining is 3.75 percent. The severance tax rate on natural gas production is six percent.[19]

According to the Wyoming Department of Revenue, for production in 2008, the severance tax on coal production yielded **$261.6 million**, and the severance tax on natural gas production yielded **$720.2 million**.[20]

Property Taxes

West Virginia levies a real and personal property tax on coal. As noted in the BBER/CBER report:

> ***Real Property Tax***
> *The real property tax is levied on subsurface minerals separately from the surface value of the land, as coal reserves are defined as a separate class of real property in West Virginia. The severed mineral interest is appraised differently based on the type of coal property and where the coal bed is located. The assessed value of property is 60 percent of the appraised value. The levy rate, determined for each county, is then applied to the assessed value to determine the amount of property taxes levied.*
>
> *West Virginia defines five types of coal property to be subject to property taxation. Active mining coal property is appraised by taking a three-year weighted average of production figures. These production figures are then converted to an income stream and the present worth is determined through discounting.*
>
> *Reserve coal property is appraised through a "reserve appraisal formula." Ten factors are considered to determine the present value per acre of each coal bed in the state and include:*

Present value per acre of a coal bed;
Coal price per million BTU;
Average royalty rate;
BTU and sulfur adjustment factor;
Mid-year present worth factor;
BTU content in one pound of dry coal;
Tonnage conversion factor;
Tonnage per acre foot conversion factor;
Clean coal recovery rate;
Coal bed thickness (in feet).

Unmineable coal property in West Virginia, which is a coal bed with a thickness of less than 30 inches, is appraised at a base rate of $5 per acre. Mined-out and barren coal properties, the last of the five types of coal property, are each appraised at $1 per acre. Certain conditions must be met when a site includes more than one type of coal property.

Personal Property Tax
Personal property related to coal in West Virginia for taxation purposes is considered commercial and industrial personal property. This property is appraised at fair market value of the property based on the consideration of three valuation methods: the cost approach, the income approach, and the market data approach. Because of information availability, the cost approach is often the most effective method used for appraising coal-related personal property. As with real property, personal property is assessed at 60 percent of the appraised value and then subject to the current levy rate.

As stated above in the BBER/CBER report, total real and personal property levied was **$91 million**.

West Virginia levies both a real and personal property tax on natural gas. According to a revised November 2011 report, "Taxation of Natural Gas: A Comparative Analysis," by Marshall University's Center for Business and Economic Research:

Real Property Tax
The State of West Virginia values producing and reserve natural gas real property by the standards discussed below and assesses the appraisal at 60 percent of value. Once the assessment is complete, the counties apply applicable local levy rates.

Producing natural gas real property in West Virginia is valued through a yield capitalization model on net receipts for the working interest and a yield capitalization model on gross royalty payments for the royalty interest. The capitalization rate used to value producing natural gas property is determined each year by the Tax Commissioner using both a discount and property tax component. The discount component is comprised of five subcomponents:

- *Safe rate*
- *Risk rate*
- *Nonliquidity rate*
- *Management rate*
- *Inflation rate*

The safe rate refers to a rate of return on an investment which poses low risk. This rate is calculated using a three-year weighted average of interest rates as given on 13-week United States Constant Maturity Treasury Yields.

The risk rate is an estimation of the interest rates which are required on loans for either purchase or development of natural gas property. This calculation is made by first determining the prime interest rate charged by banks for the previous three years and adding two percent to each rate. This rate is compared to the 13-week United States Constant Maturity Treasury Yields as used for the safe rate. A weighted average of the prime interest rates, increased by two percent each year, is then calculated.

The nonliquidity rate uses a yearly survey to estimate the amount of time natural gas property will remain on the market before being sold. United States Constant Maturity Treasury Yields of at least 13 weeks are then examined to identify those with similar time differentials. The interest differential between the rates is the nonliquidity rate.

The management rate is the cost of managing the investment and is set at a rate of 0.5 percent.

The inflation rate is an estimation of the consumer price index of the United States Department of Labor, Bureau of Statistics. A three-year weighted average of this rate is used for the inflation rate.

The value of nonproducing natural gas property is determined by taking the "sum of the projected annual income stream from delay rental during the lease term discounted in each year by capitalization rate."

Nonproducing natural gas property that is considered barren of the natural resource, as well as abandoned or plugged natural gas property, is valued at $1 per acre. A cap of 125 acres per natural gas well is imposed on abandoned or plugged natural gas property.

Personal Property Tax

The State of West Virginia considers natural gas personal property "commercial and industrial personal property" for taxation purposes. Commercial and industrial personal property is appraised at fair market value with consideration of three valuation methods:

- *Cost approach*
- *Income approach*
- *Market data approach*

The cost approach is the most widely effective method used to appraise natural gas personal property due to data available. The cost approach is implemented using an estimated value of the property and the amount of accrued depreciation. The three types of depreciation considered for the cost approach are:

- *Physical deterioration*
- *Functional obsolescence*
- *Economic obsolescence*

Once the appraised value is determined the property is assessed at 60 percent and then subject to the current levy rate in each county.

According to a December 2010 study by West Virginia University's Bureau of Business and Economic Research, "The Economic Impact of the Natural Gas Industry and the Marcellus Shale Development in West Virginia in 2009," the total property taxes paid by the natural gas industry were **$58,342,129** in 2008.[21]

All minerals, including coal and natural gas, produced in Wyoming are exempt from real property taxes. While natural gas is not subject to the personal property tax in Wyoming, Wyoming does tax surfacing mining equipment. According to the Wyoming Mining Association, coal producers paid **$24,215,757** in personal property taxes in 2009 based on 2008 production.

While most real and personal mining property is exempt, an ad valorem property tax, known as the county gross products tax, is levied on mineral production in Wyoming. Local property tax levy rates are applied to the taxable production value of the mineral produced in the county during the previous calendar year. Counties collect the tax directly from the mineral producer. Levy rates vary by county and local property tax districts. In 2009, the average property tax rate on underground coal production was 66.064 mills (6.6 percent), on surface coal production was 58.947 mills (5.9 percent), and on natural gas production was 62.094 mills (6.1 percent).[22]

According to the Wyoming Department of Revenue, the county gross products tax on coal production yielded **$222.0 million** and the tax on natural gas production yielded **$745.3 million**, for production in 2008.[23]

West Virginia does not levy an ad valorem property tax on mineral production.

Other Taxes

Workers' Compensation – West Virginia

West Virginia levies an additional severance tax on coal and natural gas production on top of the base rate of five percent. The revenue from this severance tax is used to pay down the coal industry's unfunded workers' compensation debt. Once the debt is paid off, the additional tax will be removed, which is expected to happen in the next two to three years.

The workers' compensation tax rate is $0.56 per ton for coal, and $0.047 per Mcf for natural gas.[24] According to the WVU BBER report, the workers' compensation tax on coal yielded **$80.0 million** in 2008.[25]

According to State Tax Department documents, the effective rate on natural gas is between $0.041 and $0.044 per Mcf.[26] Using an effective rate of $0.043 and marketed production volume of 244,880,000 Mcf,[27] it is estimated that the workers' compensation tax on natural gas yielded **$10.5 million**.

It is important to recognize that this tax is estimated to be eliminated by FY 2016 when the debt is fully paid down.

Special Reclamation – West Virginia

West Virginia levies a special reclamation tax on "clean coal" that has been processed and cleaned before shipment. The revenue from this tax goes to the Special Reclamation Fund and the Special Reclamation Water Trust Fund.

The special reclamation tax rate is $0.144 per ton of clean coal produced.[28] According to the BBER/CBER report, the special reclamation tax yielded **$13.6 million** in 2008, a figure obtained from the West Virginia Department of Environmental Protection.[29] In 2012, the legislature voted to increase the tax to 28 cents a ton.[30]

Conservation – Wyoming

Wyoming levies a conservation tax on natural gas produced, transported, or sold in the state. Revenue from the conservation tax is used to fund remediation, reclamation, and conservation.

According to the Petroleum Association of Wyoming, the conservation tax on oil and natural gas yielded $4.4 million in 2010, or 0.044 percent of the total production value of oil and gas in the state.[31] Applying the 0.044 percent effective rate to the estimated production value of natural gas gives an estimated revenue yield of **$6.8 million** for 2008.

Appendix 2: West Virginia and a County Gross Production Tax

West Virginia's real and personal property tax yielded $91 million from coal property and $58 million from natural gas property in 2008 for a total of $149 million. If West Virginia were to levy its property tax on coal and natural gas production, rather than on real and personal property, like in Wyoming, the coal property tax would have yielded $220.9 million, while the natural gas property tax would have yielded $43.5 million, for a total of $264.4 million.

Appendix 2: Table 1 shows estimated coal property tax revenue for West Virginia counties obtained by applying their rural district levy rates[32] to the value of coal produced in that county. The value of coal was estimated as follows: According to the West Virginia Geological and Economic Survey, approximately 165.7 million tons of coal was mined in West Virginia in 2008.[33] Based on the estimated production value of $9.7 billion, this gives an estimated average price of $58.55 per ton. The average price of $58.55 per ton was applied to each county's estimated production, also obtained from the West Virginia Geological and Economic Survey, to estimate the production value for each county.

Appendix 2: Table 1

Alternative Property Tax Scenario - Coal, 2008

	Estimated Production Value (millions)	Rural Levy Rate (dollars/$100 of value)	Estimated Revenue (millions)
Barbour	$114.9	1.648	$1.9
Boone	$1,813.7	2.526	$45.8
Braxton	$20.8	1.5024	$0.3
Brooke	$30.3	2.7114	$0.8
Clay	$207.8	1.6144	$3.4
Fayette	$246.3	2.562	$6.3
Greenbrier	$39.1	1.859	$0.7
Harrison	$24.7	2.2648	$0.6
Kanawha	$759.7	2.3836	$18.1
Lincoln	$22.6	2.4904	$0.6
Logan	$1,208.6	2.5152	$30.4
Marion	$653.8	2.2852	$14.9
Marshall	$630.9	2.444	$15.4
Mason	$35.4	2.3324	$0.8
McDowell	$322.2	2.1168	$6.8
Mineral	$5.2	2.3876	$0.1
Mingo	$698.6	2.276	$15.9
Monongalia	$636.6	2.0712	$13.2
Nicholas	$257.4	1.8904	$4.9
Preston	$75.6	1.4992	$1.1
Raleigh	$635.8	2.3952	$15.2
Randolph	$53.1	1.3576	$0.7
Tucker	$148.4	1.3528	$2.0
Upshur	$129.7	1.7208	$2.2
Wayne	$298.0	2.3388	$7.0
Webster	$327.5	1.3308	$4.4
Wyoming	$308.6	2.37	$7.3
TOTAL	$9,705.3		$220.9

Sources: West Virginia State Tax Department and West Virginia Geological and Economic Survey.
Note: Assumes average statewide price of coal of $58.55 per ton based on effective severance tax rates and that all production occurs outside of municipal tax districts.

Appendix 2: Table 2 shows estimated gas property tax revenue for West Virginia counties. The estimates were obtained by applying their rural district levy rates[34] to the value of gas produced in that county. The value of gas was estimated as follows: According to the West Virginia Geological and Economic Survey, approximately 258,747,684 Mcf of gas was produced in West Virginia in 2008.[35] Based on the estimated production value of $1.96 billion, this gives an estimated average price of $7.59 per Mcf. The average price of $7.59 per Mcf was applied to each county's estimated production, also obtained from the West Virginia Geological and Economic Survey, to estimate the production value for each county.

Appendix 2: Table 2

Alternative Property Tax Scenario - Natural Gas, 2008

	Estimated Production Value (thousands)	Rural Levy Rate (dollars/$100 of value)	Estimated Revenue (thousands)
Barbour	$84,114	1.648	$1,386
Boone	$71,269	2.526	$1,800
Braxton	$26,904	1.502	$404
Cabell	$9,758	2.812	$274
Calhoun	$29,439	1.708	$503
Clay	$23,600	1.614	$381
Doddridge	$108,801	2.663	$2,897
Fayette	$18,897	2.562	$484
Gilmer	$52,171	1.880	$981
Grant	$1,166	1.340	$16
Harrison	$113,768	2.265	$2,577
Jackson	$42,021	2.487	$1,045
Kanawha	$122,374	2.384	$2,917
Lewis	$118,617	1.852	$2,197
Lincoln	$84,663	2.490	$2,108
Logan	$120,015	2.515	$3,019
McDowell	$163,960	2.117	$3,471
Marion	$25,871	2.285	$591
Marshall	$20,956	2.444	$512
Mason	$3,882	2.332	$91
Mercer	$13,181	2.276	$300
Mingo	$96,489	2.276	$2,196
Monongalia	$31,624	2.071	$655
Nicholas	$10,388	1.890	$196
Pendleton	$2,522	1.287	$32
Pleasants	$5,914	2.120	$125
Pocahontas	$529	1.301	$7
Preston	$4,612	1.499	$69
Putnam	$32,423	2.250	$730
Raleigh	$62,292	2.395	$1,492
Randolph	$9,233	1.358	$125
Ritchie	$69,836	2.221	$1,551
Roane	$27,032	1.652	$446

Summers	$156	1.358	$2
Taylor	$14,432	2.233	$322
Tucker	$4,413	1.353	$60
Tyler	$15,170	2.340	$355
Upshur	$64,898	1.721	$1,117
Wayne	$40,091	2.339	$938
Webster	$228	1.331	$3
Wetzel	$20,381	2.276	$464
Wirt	$3,441	2.470	$85
Wood	$2,024	2.196	$44
Wyoming	$191,025	2.370	$4,527
TOTAL	**$1,964,701**		**$43,500**

Sources: West Virginia State Tax Department and West Virginia Geological and Economic Survey.
Note: Assumes statewide average price of natural gas of $7.59 per Mcf based on effective severance tax rates and that all production occurs outside of municipal tax districts.

Endnotes

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