Joint Interim Meeting Finance-Energy Severance Taxes

DEPUTY REVENUE SECRETARY MARK B. MUCHOW

West Virginia State Capitol
June 25, 2018
Background Information

Source: U.S. Census Bureau, State Government Tax Collections

- **Severance taxes** are incurred when non-renewable natural resources are extracted (or severed) within a taxing jurisdiction. (Wikipedia Definition)

- Severance Taxes Imposed in 35 States
  - Oil, Natural Gas and Coal the three top minerals subject to tax
  - $8.5 Billion in collections in FY2017 (0.9% of total State Tax collections)
  - Average annual decline of 2.6% versus 2.2% growth for all tax collections [2007-2017]
  - More prevalent in small states, less prevalent in larger states
    - No Severance Tax imposed in New York, Pennsylvania, Illinois
    - Pennsylvania: Drilling Impact Fee - $200 million + per year yield [Collected by PPUC]

- Texas, Alaska and North Dakota account for two-thirds of total tax receipts
  - Per Capita Collections: $2,010 in North Dakota, $945 in Alaska & $890 in Wyoming
  - Per Capita Collections: $225 in West Virginia, $112 in Texas, $29 in Kentucky

- Tax Collection Patterns Highly Volatile & Uncertain
Origin of the State Severance Tax
Gross Sales Tax Law - 1921

- The "fairest tax" replaced a tax on corporate profits & an unconstitutional gas pipeline tax as of July 1, 1921

- Base of tax was business gross receipts > $10,000

- Tax Rate on Mining: 0.40% of gross receipts
Origin of the State Severance Tax
Business & Occupation Tax – 1971-75 Changes

• New Rates Imposed in 1971

- Coal: 3.50% of gross receipts
- Oil: 4.34%
- Natural Gas: 8.63%
- Limestone, Sandstone: 2.20%
- Sand Gravel: 4.34%
- Timber: 2.20%
- Other: 2.86%

1975 – 0.35% Local Coal Added to 3.50% State Tax
Current Tax Rates – Natural Gas & Oil

1. 5.00% State Tax on value at the well-head
   • Gross Receipt Exclusions
     – Free natural gas provided to surface owner
     – Low Volume well exclusion for Less Than 5,000 cubic feet per day (NG)
       » Less than 1.3% of production
     – Low-Volume well exclusion for Less Than One-Half Barrel of Oil per day
       » Less than 6% of production
     – 10-Year exclusion for vertical wells shut-in for period of 5 or more years
   • Other Tax Preferences
     – Manufacturing Investment Tax Credit—Gas Processing Facilities
     – $500 annual credit: <$2 million/year

2. 5.00% Local Tax on Coal-Bed Methane at the well-head
WV Natural Gas Severance Tax Collections by Fiscal Year 1972-2017
Natural Gas Transportation Allowance. –

Value is determined at the well head. Where natural gas is transported to a place distant from the well head for use, consumption or further processing, the cost of transporting the natural gas is not included in the value of product taxed.

Actual Transportation Costs Deduction -- must be supported by schedules and statements of cost by the producer and will be subject to review and audit, and possible assessment or refund as a result of such audit, by the Tax Department.

FERC Alternative -- producers who are subject to regulation by the Federal Energy Regulatory Commission (FERC) under the Natural Gas Act of 1978 may use the first sale ceiling price as determined by FERC §2(21) of the Natural Gas Policy Act report as the value of their gas production the regulation as an amount equal to the Purchased Gas Adjustment (PGA) filed bi-annually with FERC plus any reimbursement of personal property taxes and business and occupation taxes or other severance taxes made by purchasers on sale of affected gas if included in the PGA costs.

Average Pool Price –alternative -- Well-mouth value of production may be determined by the average purchase price of natural gas from the same pool or field, or, in the event no gas is purchased from the same pool or field, by average purchase price of natural gas from the most proximate pool or field, of gas with the same quality and characteristics.

15% Safe Harbor -- Value of gas not sold at the well-mouth may be determined by a deduction of transportation and transmission costs in the amount of 15% of the gross proceeds.
Monthly Natural Gas Prices from November 2014 Through April 2018

Source: Natural Gas Intelligence
Dry Natural Gas Severance Tax Base

- Volume (1,000 cubic feet)
  - Louisiana - wellhead
  - North Dakota - wellhead
  - Ohio - wellhead (300 pounds per square inch)

- Receipts
  - Nevada: Net Proceeds: Gross receipts less production costs
  - Oklahoma & Kentucky: Gross Receipts at first sale
  - Texas: Gross Receipts at wellhead
  - Wyoming: Fair market value less processing & transportation deductions at outlet of initial dehydrator
  - West Virginia: Gross Receipts at wellhead
## Comparative Natural Gas Tax Yields

<table>
<thead>
<tr>
<th>State</th>
<th>Tax Rate</th>
<th>Revenue</th>
<th>Est Yield Per Mcf</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Virginia</td>
<td>5.0% Gross Receipts</td>
<td>$109 million</td>
<td>8.2 cents</td>
</tr>
<tr>
<td>Kentucky</td>
<td>4.5% Gross Receipts</td>
<td>$7 million</td>
<td>7.5 cents</td>
</tr>
<tr>
<td>Ohio</td>
<td>2.5 cents per Mcf</td>
<td>31 million</td>
<td>2.5 cents</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Drilling Fee</td>
<td>$219 million</td>
<td>4.0 cents</td>
</tr>
<tr>
<td>Louisiana*</td>
<td>11.1 cents per Mcf</td>
<td>$101 million</td>
<td>11.1 cents</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>1-7% Gross Receipts</td>
<td>$205 million</td>
<td>8.1 cents</td>
</tr>
<tr>
<td>North Dakota*</td>
<td>7.05 cents per Mcf</td>
<td>$33 million</td>
<td>6.0 cents</td>
</tr>
<tr>
<td>Texas</td>
<td>7.5% Gross Receipts</td>
<td>$1 billion</td>
<td>16.0 cents</td>
</tr>
<tr>
<td>Wyoming</td>
<td>6.0% Gross Receipts</td>
<td>$145 million</td>
<td>8.7 cents</td>
</tr>
</tbody>
</table>
Natural Gas Production: 1992 vs 2017

Source: U.S. Department of Energy, Energy Information Administration

- Texas: 6,145,862
- Louisiana: 4,914,300
- Oklahoma: 138,675
- New Mexico: 182,000
- Pennsylvania: 2,119,314
- West Virginia: 1,601,047
- Ohio: 5,463,783
- Wyoming: 6,829,982
WV Oil Severance Tax Collections by Fiscal Year 1998-2017

- 2014, $26
- 2016, $9.7
- 2017, $14.8
- 2012, $8.1
- 2004, $1.7

$ Millions

# Comparative Oil Tax Yields

<table>
<thead>
<tr>
<th>State</th>
<th>Tax Rate</th>
<th>Revenue</th>
<th>Est Yield Per Barrel</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Virginia</td>
<td>5.0% Gross Receipts</td>
<td>$15 million</td>
<td>$2.00</td>
</tr>
<tr>
<td>Kentucky</td>
<td>4.5% Gross Receipts</td>
<td>$5 million</td>
<td>$1.90</td>
</tr>
<tr>
<td>Ohio</td>
<td>10.0 cents/barrel</td>
<td>31 million</td>
<td>$0.10</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>No Tax</td>
<td>$0 million</td>
<td>N/A</td>
</tr>
<tr>
<td>Alaska</td>
<td>35% Net Tax Value</td>
<td>$300 million</td>
<td>$1.00</td>
</tr>
<tr>
<td>California</td>
<td>$0.5038349/barrel</td>
<td>$87 million</td>
<td>$0.50</td>
</tr>
<tr>
<td>North Dakota</td>
<td>10.0% Gross Receipts</td>
<td>$1.4 billion</td>
<td>$3.60</td>
</tr>
<tr>
<td>Texas</td>
<td>4.6% Gross Receipts</td>
<td>$2.0 billion</td>
<td>$1.95</td>
</tr>
<tr>
<td>Wyoming</td>
<td>6.0% Gross Receipts</td>
<td>$148 million</td>
<td>$2.04</td>
</tr>
</tbody>
</table>
Oil Production: 1992 vs 2017

Source: U.S. Department of Energy, Energy Information Administration

Thousands of Barrels

- Texas
- Alaska
- California
- Louisiana
- Oklahoma
- Wyoming
- New Mexico
- Kansas
- North Dakota
- Colorado
- Utah
- Montana

WEST VIRGINIA DEPARTMENT OF REVENUE
WV- Small Player in Oil Production

Source: U.S. Energy Information Administration

- Severance Tax yield greatest in major oil producing states

- WV: < 9.5 million barrels in 2017
  - TX: 135 times greater at nearly 1.3 billion
  - ND: 41 times greater
  - AK: 19 times greater
  - NM: 18 times greater
  - WY: 8 times greater
WV-Current Tax Rates – Coal

75 Cent Minimum Tax Does Not Apply Unless Coal Price is < $16.13 Per Ton

1.  4.65% State Tax plus 0.35% local tax
   - Thin Seam—State rate – No reduction in local tax rate
     - 1.65% rate if underground seam between 37” and 45”
     - 0.65% rate if underground seam less than 37”
   - Waste Coal: 2.5% local tax in lieu of 5.0% tax

2.  Coal Reclamation Fee: $0.279/clean ton mined

3.  DEP Administrative Fee: $0.02/clean ton sold

4.  Coal Resource Transportation Fee: $0.05/ton
   - Payable by shippers of coal under special permit
   - Privilege of hauling more than 88,000 pounds on coal roads
Coal Severance Tax Preferences

• Thin-Seam Underground Tax Rates
  – Estimated 10-20 million tons/year
  – 1.65% rate: 70% of tonnage ($28.6 million in TY2017)
  – 0.65% rate: 30% of tonnage ($18.0 million in TY2017)

• Coal-Loading Facility Tax Credit:
  – 10% investment tax credit [transfer to rail or barge]
  – 1.1 million/year

• $500 Annual Credit: < $30,000
Value of Thin-Seam Tax Rate Preference Tied to Metallurgical Coal Market

$ Millionen

$120.0
$100.0
$80.0
$60.0
$40.0
$20.0
$-


WEST VIRGINIA DEPARTMENT OF REVENUE
West Virginia Non-Manufacturing Good Exports
Down 49% Since 2012; Up 245% Since October 2016
Trailing 12 Month Trend: April 2018

Source: U.S. Census Bureau
Coal Severance Tax Revenue Trends by Tax Year-Annual Return Data
State and Local Coal Severance Tax Revenue Trends: 1972-2017

$ Millions

West Virginia Department of Revenue
## Comparative Coal Tax Yields

<table>
<thead>
<tr>
<th>State</th>
<th>Tax Rate</th>
<th>Revenue</th>
<th>Est Yield Per Ton</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Virginia</td>
<td>5.0% Gross Receipts</td>
<td>$257 million</td>
<td>$2.75</td>
</tr>
<tr>
<td>Kentucky</td>
<td>4.5% Gross Receipts</td>
<td>$121 million</td>
<td>$2.35</td>
</tr>
<tr>
<td>Ohio</td>
<td>25.2 cents/ton</td>
<td>3 million</td>
<td>$0.252</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>No Tax</td>
<td>$0 million</td>
<td>N/A</td>
</tr>
<tr>
<td>Virginia</td>
<td>2.0% Gross Receipts</td>
<td>Local Tax</td>
<td>$1.20</td>
</tr>
<tr>
<td>Illinois</td>
<td>No Tax</td>
<td>$0 million</td>
<td>N/A</td>
</tr>
<tr>
<td>Montana (3%-15%)</td>
<td>10% Gross Receipts</td>
<td>$60 million</td>
<td>$1.70</td>
</tr>
<tr>
<td>Texas</td>
<td>No Tax</td>
<td>$0 million</td>
<td>N/A</td>
</tr>
<tr>
<td>Wyoming (3.5-7%)</td>
<td>7.0% Gross Receipts</td>
<td>$203 million</td>
<td>$0.69</td>
</tr>
</tbody>
</table>
Coal Production: 1992 vs 2017
Source: U.S. Department of Energy, Energy Information Administration

<table>
<thead>
<tr>
<th>State</th>
<th>1992</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wyoming</td>
<td>190</td>
<td>316</td>
</tr>
<tr>
<td>West Virginia</td>
<td>162</td>
<td>43</td>
</tr>
<tr>
<td>Kentucky</td>
<td>161</td>
<td>93</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>69</td>
<td>43</td>
</tr>
<tr>
<td>Texas</td>
<td>43</td>
<td>49</td>
</tr>
<tr>
<td>Illinois</td>
<td>30</td>
<td>14</td>
</tr>
<tr>
<td>Virginia</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>North Dakota</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Montana</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indiana</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ohio</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

West Virginia Department of Revenue
## Annual Coal Production by State: 2018 v 2017

Total U.S. Production Down 2.2%

Source: U.S. Energy Information Administration, *Weekly Coal Production*

<table>
<thead>
<tr>
<th>State</th>
<th>YE 6/2/2018</th>
<th>YE 6/3/2017</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wyoming</td>
<td>314,895</td>
<td>325,514</td>
<td>- 3.3%</td>
</tr>
<tr>
<td>West Virginia</td>
<td>92,779</td>
<td>88,859</td>
<td>+ 4.4%</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>48,398</td>
<td>50,004</td>
<td>- 3.2%</td>
</tr>
<tr>
<td>Illinois</td>
<td>47,745</td>
<td>47,105</td>
<td>+ 1.4%</td>
</tr>
<tr>
<td>Kentucky</td>
<td>41,214</td>
<td>44,656</td>
<td>- 7.7%</td>
</tr>
<tr>
<td>Montana</td>
<td>36,254</td>
<td>33,744</td>
<td>+ 7.4%</td>
</tr>
<tr>
<td>Texas</td>
<td>34,991</td>
<td>38,271</td>
<td>- 8.6%</td>
</tr>
<tr>
<td>Indiana</td>
<td>30,828</td>
<td>30,956</td>
<td>- 0.4%</td>
</tr>
<tr>
<td>North Dakota</td>
<td>28,235</td>
<td>28,762</td>
<td>- 1.8%</td>
</tr>
<tr>
<td>Colorado</td>
<td>15,359</td>
<td>15,039</td>
<td>+ 2.1%</td>
</tr>
<tr>
<td>Utah</td>
<td>13,889</td>
<td>14,230</td>
<td>- 2.4%</td>
</tr>
<tr>
<td>Virginia</td>
<td>13,212</td>
<td>14,232</td>
<td>- 7.2%</td>
</tr>
</tbody>
</table>
Volatile Severance Tax Collections: 2007-2017
Source: U.S. Census Bureau: State Government Tax Collections

Severance Tax Collections - All States
Fiscal Year 2007 - Fiscal Year 2017

$ Billions

Severance Tax Share Falling To Less Than 1% of Total Taxes
% Share of Total State Tax Collections

WEST VIRGINIA DEPARTMENT OF REVENUE
U.S. Mining GDP: 2007-2017

Average Annual Real GDP Growth of 4.0% vs. Nominal GDP Growth of 0.5%/Year

Source: U.S. Department of Commerce Bureau of Economic Analysis

U.S. Mining GDP - $ Millions
WV Mining GDP: 2007-2017
Average Annual Real GDP Growth of 3.8% vs. Nominal GDP Growth of 4.1%/Year
Source: U.S. Department of Commerce Bureau of Economic Analysis

WV Mining GDP - $ Millions


Nominal GDP Chained $2009 GDP
Severance Taxes: 1% of Total Tax in 34 States in FY2017
Source: U.S. Census Bureau

Share of Total State Tax Collections

- Alaska: 53%
- North Dakota: 41%
- Wyoming: 30%
- New Mexico: 8%
- West Virginia: 6%
- Montana: 1%
- Texas: 5%
- Oklahoma: 5%
- Louisiana: 6%
- Kentucky: 0%

Share of Total Severance Tax

- TX: 36%
- Others: 15%
- ND: 18%
- NM: 7%
- AK: 8%
- Wyoming (WY): 6%
Relationship Between Economic Output of Mining Sector and Resident Population

Source: U.S. Bureau of Economic Analysis

Per Capita Mining GDP-2017

- **WY**: $13,678
- **AK**: $11,330
- **ND**: $6,857
- **OK**: $4,453
- **WV**: $4,346
- **TX**: $4,346
- **NM**: $2,110
- **LA**: $2,110
Relationship Between Severance Tax Yield & Economic Output of Mining Sector
Sources: U.S. Census Bureau & Bureau of Economic Analysis

Ratio of Severance Tax Yield to Mining GDP-2016-2017

<table>
<thead>
<tr>
<th>State</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>ND</td>
<td>29.3%</td>
</tr>
<tr>
<td>MT</td>
<td>8.7%</td>
</tr>
<tr>
<td>AK</td>
<td>8.3%</td>
</tr>
<tr>
<td>NM</td>
<td>7.1%</td>
</tr>
<tr>
<td>WY</td>
<td>6.5%</td>
</tr>
<tr>
<td>WA</td>
<td>5.1%</td>
</tr>
<tr>
<td>MS</td>
<td>4.6%</td>
</tr>
<tr>
<td>SD</td>
<td>5.1%</td>
</tr>
<tr>
<td>KS</td>
<td>4.6%</td>
</tr>
<tr>
<td>OR</td>
<td>5.1%</td>
</tr>
<tr>
<td>WV</td>
<td>4.6%</td>
</tr>
<tr>
<td>KY</td>
<td>5.1%</td>
</tr>
</tbody>
</table>
This represents severance taxes deposited into the General Revenue Fund and does not include the annual severance taxes allocated to the Debt Service Fund, or the severance taxes distributed back to local governments. The State Legislature temporarily suspended the regular 1.22% Severance Tax on timber dedicated to the Division of Forestry. Timber production in the State continues to be subject to an additional Severance Tax under the Workers Compensation Debt Reduction Act of 2005. When the unfunded accrued actuarial liability of the Old Fund has been paid, the regular timber Severance Tax of 1.22% will be reinstated.

May be subject to a reduction of 3% for the Future Fund. See discussion regarding Future Fund herein.

The 5% Coal Severance Tax reallocation will be phased in over five years and began in fiscal year 2013 when 1% of the coal Severance Tax was reallocated back to the counties from which the tax was generated. This percentage will increase by 1% in each succeeding fiscal year until it reaches the maximum of 5% in fiscal year 2017. But the total reallocation of State coal severance tax to coal producing counties may not exceed $20 million in any fiscal year.

The distribution of severance tax revenues from natural gas from coal-bed methane wells to local governments is capped at $4 million a year, any additional revenues beyond this cap is retained by the State. To date severance tax from natural gas from coal-bed methane wells has not exceeded $4 million in any year so the State has not retained any revenue from this source.
### Severance Tax Summary FY 2017

<table>
<thead>
<tr>
<th></th>
<th>Regular State</th>
<th>Local Government</th>
<th>Total Severance Tax</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Severance Tax</strong></td>
<td><strong>Tax Distribution</strong></td>
<td><strong>Total Severance Tax</strong></td>
<td></td>
</tr>
<tr>
<td>Coal</td>
<td>$ 210,457,542</td>
<td>$ 25,688,239</td>
<td>$ 236,145,781</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>$ 99,941,819</td>
<td>$ 9,950,820</td>
<td>$ 109,892,640</td>
</tr>
<tr>
<td>Oil</td>
<td>$ 14,044,877</td>
<td>$ 768,049</td>
<td>$ 14,812,926</td>
</tr>
<tr>
<td>Sand, Gravel</td>
<td>$ 1,585,001</td>
<td>-</td>
<td>$ 1,585,001</td>
</tr>
<tr>
<td>Limestone, Sandstone</td>
<td>$ 953,085</td>
<td>-</td>
<td>$ 953,085</td>
</tr>
<tr>
<td>Timber</td>
<td>$ 1,336,937</td>
<td>-</td>
<td>$ 1,336,937</td>
</tr>
<tr>
<td>Other</td>
<td>$ 16,392,363</td>
<td>-</td>
<td>$ 16,392,363</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$ 344,711,625</td>
<td>$ 36,407,108</td>
<td>$ 381,118,734</td>
</tr>
</tbody>
</table>

### Severance Tax Summary FY 2016

<table>
<thead>
<tr>
<th></th>
<th>Regular State</th>
<th>Local Government</th>
<th>Total Severance Tax</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Severance Tax</strong></td>
<td><strong>Tax Distribution</strong></td>
<td><strong>Total Severance Tax</strong></td>
<td></td>
</tr>
<tr>
<td>Coal</td>
<td>$ 190,902,362</td>
<td>$ 27,820,221</td>
<td>$ 218,722,583</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>$ 47,384,418</td>
<td>$ 15,187,205</td>
<td>$ 62,571,624</td>
</tr>
<tr>
<td>Oil</td>
<td>$ 7,553,311</td>
<td>$ 2,119,248</td>
<td>$ 9,672,559</td>
</tr>
<tr>
<td>Sand, Gravel</td>
<td>$ 1,592,107</td>
<td>-</td>
<td>$ 1,592,107</td>
</tr>
<tr>
<td>Limestone, Sandstone</td>
<td>$ 1,458,381</td>
<td>-</td>
<td>$ 1,458,381</td>
</tr>
<tr>
<td>Timber</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Other</td>
<td>$ 11,151,854</td>
<td>-</td>
<td>$ 11,151,854</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$ 260,042,432</td>
<td>$ 45,126,675</td>
<td>$ 305,169,107</td>
</tr>
</tbody>
</table>
Severance Tax Conclusions

- Severance Tax collections highly volatile
  - Less than 1% of total tax collections
  - Declining over last decade
  - Revenue highest when supply tight relative to demand
  - Single year revenue variation may approach or exceed 50%
  - Alaska, North Dakota and Wyoming place significant sums in trust funds

- Oil is Gold
  - 3 states (TX, ND & AK) account for more than 52% of oil production & more than 62% of tax yield
  - Less pricing power with natural gas and coal

- Difficult to Compare Across States
  - Mineral quality and pricing vary
  - Some states (e.g., Alaska, Louisiana, Oklahoma & North Dakota) impose severance tax in lieu of property tax
  - Local governments impose an average of $250 million per year in property taxes on mining activity in West Virginia
Questions?