



## Balancing Budgets by Raising Depletion Taxes

JUSTIN DAHLHEIMER  
jdahlheimer@ilsr.org



### Executive Summary

Soaring mineral prices offer states a potential new and important revenue source to alleviate state and local government budget shortfalls. These increased prices are allowing technological innovation to spur the discovery and extraction of natural resources in places never before considered profitable. As a result, natural resource wealth is streaming from the lands, away from the state and local governments that must endure the direct costs of drilling and mining, in step with the fiscal impact of a sluggish economy.

Thirty-eight states currently impose a depletion or severance tax on natural resource extraction. However, many of these states currently use antiquated depletion tax policies that generate small revenues. Several states do not impose any tax on exhaustible resources.

A number of states are revising their depletion taxes to reduce loopholes and increase revenue for public services. States are preserving their natural resource wealth by saving the surplus depletion tax revenue generated in this high price era, to provide stable funding when the markets turn and resources are exhausted.

Evidence suggests that the adoption of a market-based depletion tax, which applies a tax rate on the value of resources as opposed to production volume, would generate hundreds of millions, in some cases billions, of dollars in additional revenue for each state.

**Estimated Annual Revenue With New Depletion Tax Structure (in millions)**

State	Resource	Current Tax	Updated Tax
California	Oil	\$0.0	\$2,379
Colorado	Metals	\$1.5	\$162
Nevada	Minerals	\$44.5	\$735
New Mex.	Minerals	\$33.6	\$285
New York	Natural Gas	\$0.0	\$420
North Dak.	Oil	\$1,076.4	\$1,404
Ohio	Natural Gas	\$10.0	\$420
Pennsylv.	Natural Gas	\$0.0	\$840

## Introduction

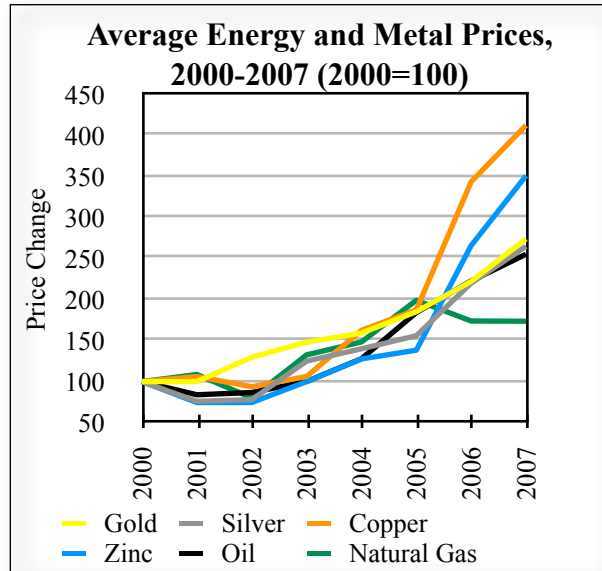
At the same time that state budgets are experiencing significant shortfalls because of the economic slowdown and the rapid decline in housing prices, energy and commodity prices are soaring. It is a perfect confluence of need and opportunity.

As of May 2008, 27 states were facing significant budget shortfalls for 2009.<sup>1</sup> Additional states anticipate having problems in 2010. Ten states already have hiring curbs in place; a number of others are making broad cuts in state jobs.<sup>2</sup>

Meanwhile, mineral and energy commodity prices in many cases have doubled and sometimes tripled in the last 24 months. Oil, natural gas, and precious metal companies have all reported record profits in the past few years.

Thirty-eight states currently tax natural gas, oil, metals and other natural resource extraction (commonly known as depletion, natural resource, or severance taxes).<sup>3</sup> Raising depletion taxes even modestly could result in significant revenue to state and local governments. In at least one case, the increased revenue could approach the level of existing budgets.

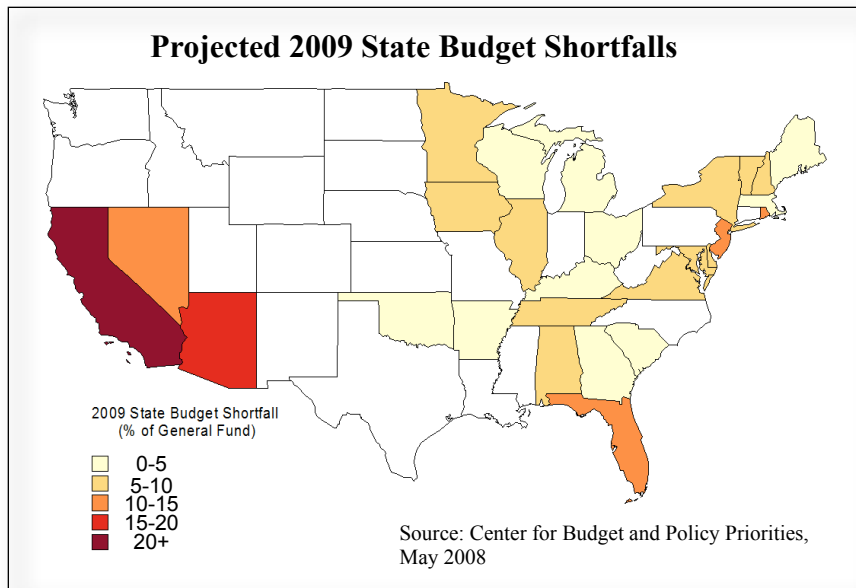
Many environmentalists may not support the extraction of natural resources. Despite their qualms, however, scarcity and accompanying price increases are pushing the continual discovery and extraction of non-renewable resources. It is up to state governments to maximize the public benefit of the natural resources while they still exist.



Natural resource taxes are, in essence, exhaustion taxes. These resources will disappear at some future point, leaving expensive land and water cleanup along with communities struggling to shed their dependency on the industries' contribution to their economies. Many states dedicate a part of the revenue generated from the tax for environmental cleanup and to alleviate the boom-bust volatility of many mineral based towns.

Soaring mineral and energy prices have been accompanied by a technological revolution which allows for much greater extraction than was previously thought possible. Horizontal drilling, for example, allows companies to reach much more natural gas and oil reserves. Indeed, a recent analysis by the United States Geological Survey increased by 25 times the amount of technically recoverable oil in North Dakota over its 1995 estimate.<sup>4</sup> The new estimate means that if North Dakota imposed a severance tax on oil similar to that imposed by Alaska or Montana it could generate billions of dollars in additional revenue.

Many states have the opportunity to realize additional revenues by updating, adding, or adjusting their current severance and depletion tax policies. This Policy Brief explores the depletion taxes imposed by various states, and in doing so, highlights the importance of capturing this value to state and local communities in an era of budget shortfalls, resource shortages and environmental consciousness.



# Depletion Tax Strategy

## I. What is taxed?

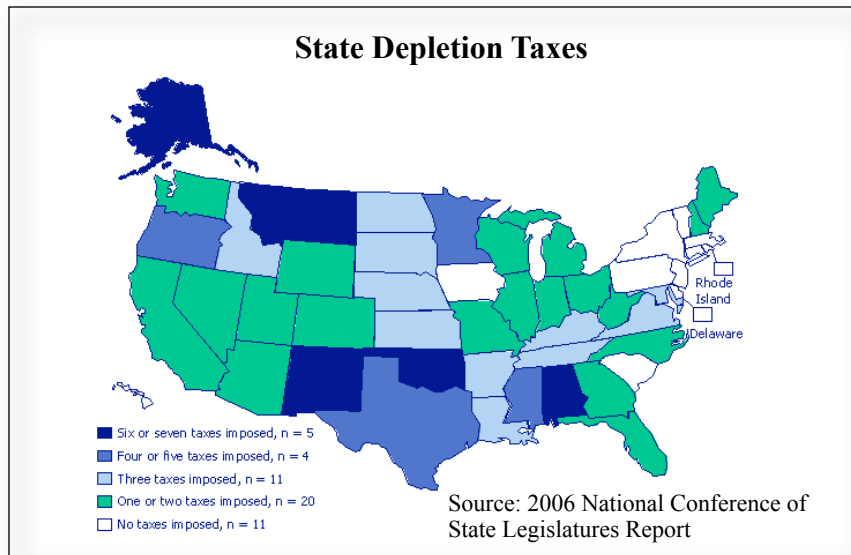
Among the thirty-eight states that levy depletion taxes, most focus on the big money makers: oil, natural gas, coal, and precious metals. There are many other resources taxed in addition to those listed, but the more obscure are not lucrative due to relatively low production and/or low market prices.

In states with reserves offshore or on state and federal lands, these taxes are in addition to any royalties and mineral leases—which are large revenue sources in some states.<sup>5</sup> Royalties and mineral leases are contracts agreed to by governments that allow mining or drilling companies to use the state or federally owned land. Their purpose is to retain a portion of the profits companies make off those lands for the land owner. Depletion taxes, on the other hand, recover value that is irretrievably lost when the resource is taken from those lands.

## II. How are resources taxed?

States typically use a combination of tax strategies, depending on the resource, market, and the size of the reserves.

- **Flat rate:** fixed rate per ton, pound, barrel, etc. Taxing at a flat rate ignores the value of the resource and focuses only on the production.
- **Tax on gross production value:** taxes the market value at the production level, which depends on a variety of interpretations. Some states focus specifically on the first sale of the resource, others incorporate an *ad valorem* approach, where the value added along the lines of production is taxed at each stage.
- **Tax on gross production value less deductions:** allows companies to deduct certain costs from the market value.
- **Taxing only profits:** companies are required to report costs and revenues, and are taxed only on the difference. This is a fairly novel approach, used to prevent companies from passing the tax through to the consumers.



Most states integrate elements from each strategy. It is common for minerals and metals to be taxed at a flat rate, due to the more erratic nature of their markets, while oil, natural gas, and coal are typically taxed at production value, to capture rising prices.

Often deductions, exemptions, and valuation procedures are added to reduce the effective tax rate. Many compromises result in the use of “trigger prices.” If a resource price falls or rises to certain level, the tax rate changes. This strategy could be used to make the depletion tax more progressive. However, the dynamic nature of the resource markets requires the trigger prices to be constantly updated, which is difficult to do in state legislatures or regulatory venues.

## III. Where does the tax go?

As the chart on the following page indicates, allocation of depletion tax revenue takes many forms.

In Nevada, communities where the natural resource is extracted are allowed to match their respective property tax rates with depletion tax revenue, and any remaining revenue goes to state coffers.<sup>6</sup>

States often set up separate funds. Colorado, for example divides the severance tax revenue equally into two funds: 1) a trust fund for Department of Natural Resource programs and water projects, 2) a fund for grants and direct distribution to local governments of mining and drilling communities.<sup>7</sup>

New Mexico and Wyoming dedicate depletion tax revenue to permanent trust funds, allowing the states to supplement their budgets with consistent revenue generated by the funds’ growth.<sup>8</sup> New Mexico’s fund,

### State Depletion Tax Distributions <sup>39</sup>

State	Local Gov.	General Fund	Trust or Reserve	Other
Alaska	0%	99%	1%	0%
Colorado	15%	0%	50%	35%
Montana	46%	45%	0%	9%
Nevada	53%	44%	0%	3%
North Dak.	23%	43%	26%	8%
Oklahoma	15%	58%	0%	27%
Wyoming	2%	26%	66%	6%

called the Severance Tax Permanent Fund (STPF), had a corpus balance of \$4.7 billion as of 2007, and distributed \$170 million to the state's general fund.<sup>9</sup> The Permanent Wyoming Mineral Trust Fund (PWMTF) held a corpus balance of \$3.7 billion in 2007, supplying \$156 million in dividends, interest, and capital gains to the state's general fund.<sup>10</sup> Both funds were established in the mid 1970's.

Unlike New Mexico and Wyoming, Alaska's \$39.7 billion permanent fund consists of portions of mineral lease rentals, royalties, royalty sale proceeds, federal mineral revenue-sharing payments, and bonuses received by the state. Nearly all of Alaska's oil and gas depletion tax revenue goes to the state's general fund.

Instead of, or in addition to, levying a general severance tax, some states have separate taxes for conservation, education or other issue specific funds. In addition to New Mexico's general severance tax on oil and natural gas, for example, the state imposes a conservation tax and an emergency school fund tax.

Certain states allow local governments to levy depletion taxes on the resources in their region. As stated in Alabama statute, "[a depletion] tax shall be levied primarily to compensate the county for the use of its roads and infrastructure and also for the benefit, health, safety, and economic development of the county in which the severed material is severed."<sup>11</sup> Currently four other states (Maryland, Minnesota, Mississippi, and Tennessee) allow local governments the authority to impose depletion taxes.

## The State of State Depletion Tax Policies

The states collecting the most in severance tax revenue are not among those scrambling to find revenue to solve poor fiscal situations or local economic woes. These states have a structure that, for the most part, is offsetting the struggling economy's detrimental effect on state tax revenues. *These states are benefitting from the rising prices for natural resources.*

As we can see from the chart below, 6 states generate more than 10 percent of their state taxes from natural resource depletion taxes.

### I. Energy Minerals - the Driver in Depletion Tax Revenue

The top severance tax collectors are the highest producers of energy minerals (oil, natural gas, coal). Alaska leads all states, collecting nearly 65% of its tax revenue from depletion taxes in 2007.

Alaska has made major structural changes in its depletion tax on oil and natural gas in the last two years. In an effort to take advantage of high energy prices the state moved from a straight 15% production

### Top 10 States in Severance Tax Collections, 2007

State	% of Total Taxes Collected
Alaska	64.4%
Wyoming	39.7%
North Dakota	22.0%
New Mexico	16.2%
Montana	11.4%
Oklahoma	10.6%
Louisiana	8.3%
West Virginia	7.1%
Texas	6.9%
Kentucky	2.8%

Source: U.S. Census

### Alaska Clear and Equitable Share Production Tax Calculation <sup>40</sup>

$$\text{ACES Tax Liability} = [(\text{Value} - \text{Costs}) * \text{Tax Rate}] - \text{Credits}$$

The terms used in the equation are defined as follows:

**Value** = Volume of Oil and Gas Produced x Wellhead Value

**Costs** = Operating Expenditures + Capital Expenditures

**Tax Rate** = 25% + 0.4%\* for every \$1 per barrel that this “net income” exceeds \$30

**Credits** = (20% x Capital Expenditures) + (20% x Eligible Transition Expenditures) + Base Allowance

\*at \$92.50 the progressive factor changes to 0.1% for every additional dollar of profit, the maximum total tax rate is 75%

tax to a 25% tax on profits, with a rising rate if profits surpass \$30/barrel.<sup>12</sup> The progressiveness of Alaska’s production tax allows the state to capture more oil and natural gas revenue when prices are climbing and companies are making large profits. Indications are that it is working—depletion tax revenues increased by 36% from 2006 to 2007.<sup>13</sup>

California’s oil industry generated \$15.9 billion in total production value in 2007, however, the state does not charge a depletion tax on oil.<sup>14</sup> Some in California have been attempting to change this by imposing a 6% depletion tax on oil, based on the gross production value. In addition, the 2008 bill, ABX3 9, included a clause that prohibits oil companies from passing this tax on to the consumer:

*“The tax imposed by this part shall not be passed through to consumers by way of higher prices for oil, gasoline, or diesel fuel. The board [of equalization] shall monitor and, if necessary, investigate any instance where producers or purchasers of the oil have attempted to gouge consumers by using the tax as a pretext to materially raise the price of oil, gasoline, or diesel fuel.”<sup>15</sup>*

The bill, which was voted down in 2008, included a 2% windfall profits tax on oil companies that earn more than \$10 million per year, in addition to the 6% production tax. Together, the taxes would have provided \$1.2 billion annually<sup>16</sup>—a big help to a state facing a \$22 billion deficit in 2009.

A state that ranks among the top 5 nationally in oil production should easily be among the top 5 in depletion tax collections. If California matched the depletion tax rates of its peers, the state would generate anywhere from \$1.2 - \$2.4 billion in annual depletion tax revenue.

In Alabama, a poorly structured severance tax on natural gas is causing the state to refund \$41 million to ExxonMobil. If other pending cases reach similar conclusions, the total could reach \$83 million. Of the ExxonMobil refund, \$14.3 million is to be paid by local governments.<sup>17</sup>

The state’s total depletion tax rate on its highest level is 10% of the market value of natural gas at the well. The value at the well is determined by the sales transaction between the companies severing the natural gas and the companies processing the natural gas. The problem is, large companies like ExxonMobil often do both the extraction and the processing. In this instance, Alabama allows these companies to use a “workback method” of accounting to deduct allowed costs, such as transportation, depreciation, administrative/overhead.<sup>18</sup> Thanks to aggressive accounting, ExxonMobil offset all of its severance tax liability with these deductions.

In 2006, Oklahoma wrestled with this same issue. Oklahoma amended its code, disallowing the “workback method” and instead, using an “average price of oil or gas produced for sales in the county from which the product is produced, as determined by the Tax Commission from monthly tax reports.”<sup>19</sup> If Alabama enacted a similar statute, ExxonMobil and other large companies would not be allowed to shed its severance tax liability.

#### Top 5 Oil Producing States - Severance Tax Collections, 2006 <sup>41</sup>

State	Oil Production (thousand barrels)	% of Total Taxes Collected
Texas	397,220	8.8%
Alaska	270,486	51.3%
California	223,449	0.1%
Louisiana	73,876	7.4%
Oklahoma	62,841	13.6%

## II. Metals and Ores - Overlooked, Antiquated Tax Systems

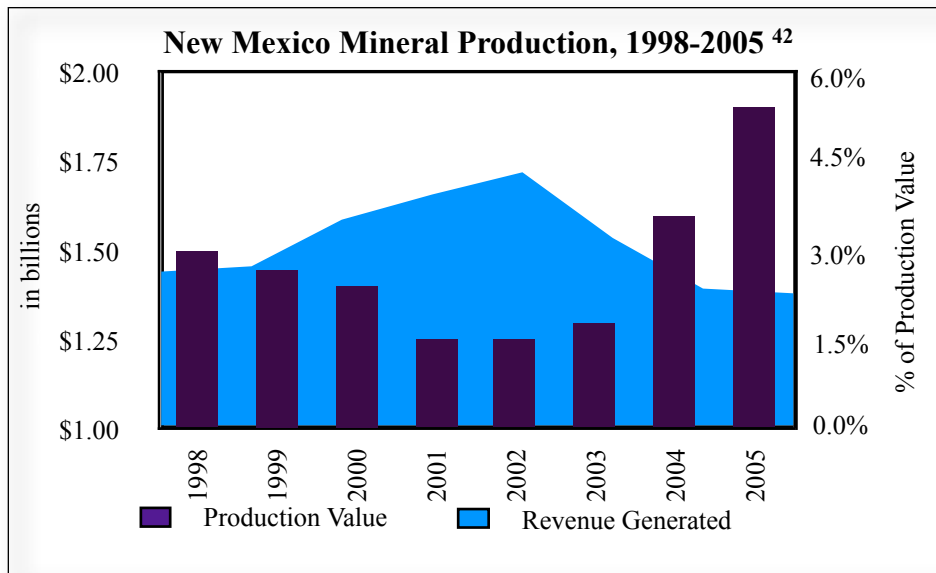
With respect to depletion tax policies, almost all attention has been given to the energy-related minerals, due to their high prices. The precious metals and ores have been largely ignored. Yet they too are experiencing higher prices.

In New Mexico since 2003, total mineral production values have risen from \$1.25 billion to \$1.9 billion, while depletion tax revenues have remained stagnate.<sup>20</sup> Moreover, the state only recovers 0.83% of total value of the minerals extracted (excluding coal), while the statutory severance tax rates are over 3 times higher.<sup>21</sup> If New Mexico moved to a gross production tax based on the value of its minerals, the state would annually generate \$290 million, about nine times what it currently collects.<sup>22</sup>

Because precious metals are extracted in the form of bigger rocks containing small traces of the metal, the true value of the metal is realized at the smelter, where the metal is actually produced. New Mexico's current system applies the tax to the first sale, which often comes before the value of the metal is increased after the smelting process.<sup>23</sup>

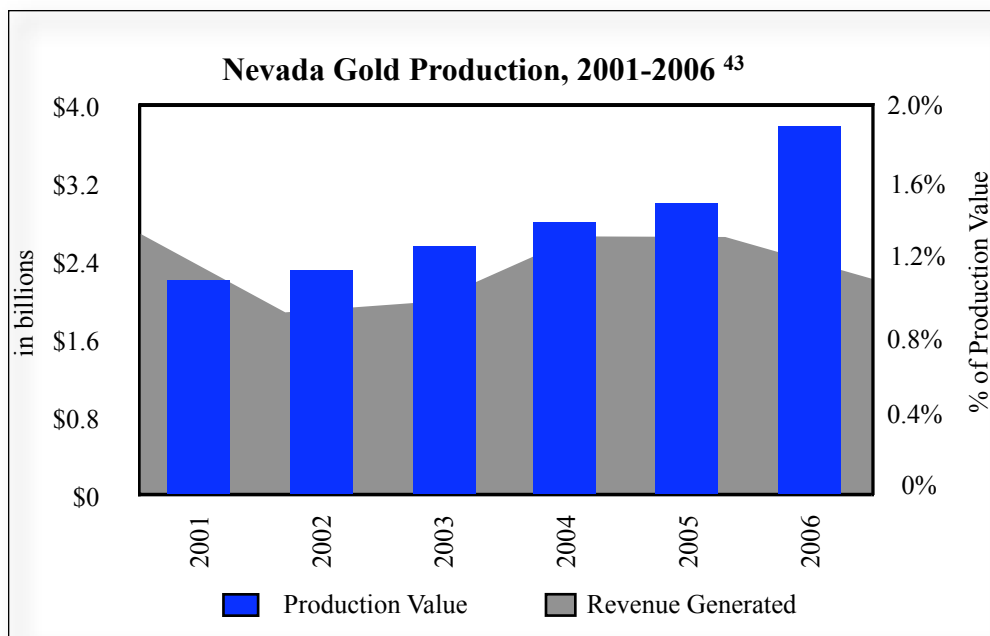
Nevada is experiencing similar problems. In 2006, the total value of all mined commodities in Nevada increased by over 30% due in large part to the rising gold price. Of the \$4.9 billion in total value, gold comprised \$3.8 billion, boasting an average price of \$603 per troy ounce.<sup>24</sup>

In March 2008, gold prices increased to over \$1,000/oz leading to a steady increase in total production value since 2005. One might expect the increase in gold



prices would boost Nevada's depletion tax revenue and help combat their \$900 million budget deficit in 2009. However, while total value of the production increased, the taxable amount of production actually decreased by 5.2% leading to overall declines in depletion tax revenues.<sup>25</sup>

This decrease in tax revenues can be attributed to Nevada's antiquated net-proceeds tax system. Dating back to 1865, the system only allows the net proceeds (gross value less deductions) from mines and mining sales to be taxed at rates from 2% - 5% , depending upon the ratio of net proceeds/gross proceeds. The long list of deductions includes costs incurred from: extraction, transportation, processing, marketing and delivery, repair and maintenance of equipment,



depreciation, fire insurance on the plant and equipment, contributions or payments for labor benefits.<sup>26</sup>

Thus, of the \$4.9 billion total value in 2006, only \$850 million was eligible for net proceeds tax. This resulted in \$44.5 million of generated tax revenue—less than a single percent of total production value.<sup>27</sup>

If Nevada eliminated the deductions and taxed just gross production value, taking the highest rate of its current depletion tax (5%) would result in nearly \$250 million, approximately 6 times what the state is currently collecting. Increasing this tax to 15% would generate nearly enough revenue to cover Nevada's \$900 million projected budget shortfall for 2009.

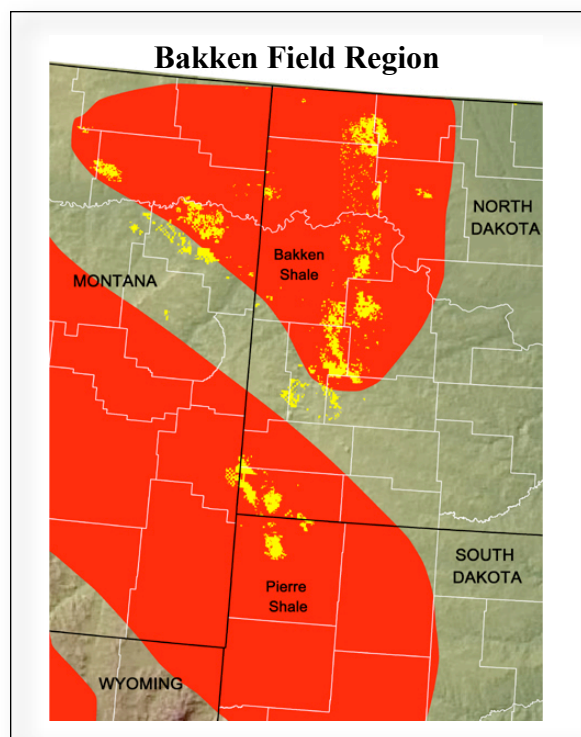
### III. The Impact of New Technologies: North Dakota's Bakken Oil Field

Two thirds of the Bakken shale formation resides in western North Dakota. In April 2008, the United States Geological Survey (USGS) reported that the formation could hold up to 4.3 billion barrels of recoverable oil, 25 times higher than their 1995 estimate. This estimate means that Bakken is the largest oil reserve in the lower 48 states and this figure could be revised upward as drilling technology advances.<sup>28</sup>

North Dakota levies a 5% production tax on the gross value of oil, along with an additional 6.5% extraction tax, resulting in a 11.5% depletion tax on oil. Each of these taxes are subject to number of exemptions based on well type and years in production. In order to spur well drilling in the Bakken formation, the North Dakota legislature passed a law in 2007 that reduced the extraction tax to 2% on the first 75,000 barrels produced in the first 18 months of the well's activity, after which the wells are subject to the regular rates.<sup>29</sup> Consequently oil drilling is rapidly increasing in the Bakken. In 2006 to the end of 2007, the number of wells in the North Dakota section of the Bakken formation has increased from 300 to 457.<sup>30</sup>

The USGS estimates that the North Dakota portion of the Bakken holds up to 2.6 billion barrels. Using a first purchase oil price of \$90/barrel, this section of the formation holds approximately \$234 billion worth of oil. If production is spread over 25 years, at the current depletion tax rate, the Bakken oil would mean an additional \$1.08 billion per year in state revenue.

North Dakota currently collects \$1.7 billion in revenue from all of its taxes. With a 3.5% increase (to 15%) in their current depletion tax rate, North Dakotans could come within \$300 million of completely replacing all



their other tax revenue with depletion tax revenue from the Bakken formation. That gap could easily close if oil prices continue to rise and drilling technologies develop. Moreover, this raise in their current rate would be justified considering Alaska had a 15% gross production tax rate prior to its change to the profits-based depletion tax system and Montana currently has a tier with a rate of 15%.

### IV. The Impact of New Technologies: Pennsylvania, New York, Ohio and the Marcellus Shale's Natural Gas

A region including eastern Ohio, all of West Virginia, western Pennsylvania, and a southern portion of New York holds a deep layer of rock called Marcellus shale. According to Dr. Terry Engelder, a professor of geosciences at Penn State, the region is home to anywhere from 168 to 516 trillion cubic feet of natural gas. Engelder estimates, with current technology, 50 trillion cubic feet of natural gas is recoverable. Because of the rising natural gas prices, horizontal drilling technology has become affordable for extracting. Considering the U.S. produces approximately 30 trillion cubic feet per year, this would be a sizeable and potentially profitable reserve. Pennsylvania and New York have no severance tax policies in place leaving them vulnerable to missing a potentially lucrative source of new tax revenue.<sup>31</sup>

Just how lucrative? Neighboring state West Virginia employs a 5% severance tax of gross value at the



wellhead (mouth of the well) for natural gas. Applying this tax rate to the 50 trillion cubic feet comes to \$17.5 billion in total additional revenue (assuming the January 2008 wellhead price of \$7/thousand cubic feet).

Ohio’s depletion tax on natural gas is applied much differently. Instead of taxing a percentage of the gross value, it uses a flat rate of 2.5 cents/thousand cubic feet. Assuming that 20% of the Marcellus natural gas resides in Ohio and extraction of the estimated reserve would take 25 years, Ohio’s current structure would generate \$10 million per year in depletion tax revenue. Ohio could scrap its current structure and move to a gross production value tax, a 15% tax on this reserve could generate \$420 million per year for the next 25 years.

This additional revenue would be of major assistance to Ohio; the state is looking at a \$733 million budget shortfall. The governor has already warned that up to 2,700 state jobs may have to be cut.<sup>32</sup>

New York is in a similar bind. The state is projecting a \$4.9 billion budget shortfall, or 9.1% of New York’s 2008 general fund. As mentioned earlier, the state does not collect a depletion tax on natural gas. Thus, an extra \$420 million per year in depletion tax revenue would be useful.<sup>33</sup>

A 15% gross production tax rate is not out of question. The chart to the right indicates that some states have rates this high or higher.

## V. Getting it Wrong: Leadville, Colorado

The metal molybdenum, used in high strength steel alloys, is experiencing a boom in value. In 2002 the price was just \$2/lb; as of March 2008 the price had risen to \$34/lb. Colorado is the largest producer of molybdenum in the U.S., reporting a total production value of \$980 million in 2006.<sup>34</sup> The combination of increased production and rising prices could lead to continued increases gross production values in the future.

The increases in production value, however, were not reflected in Colorado’s severance tax collections. Colorado applies a flat rate of \$0.05 per ton of molybdenum, exempting up to 625,000 ton per calendar quarter for each producer. Thus, no matter what the gross value of the ore, the increase in tax is dependent on an increase in production. In 1987, due to poor mining conditions, the rate was cut from \$0.15 per ton to the current rate. The rate has yet to be adjusted to reflect current and projected levels of production and value.

The severance tax revenue in Colorado is allocated 50/50 into two funds, the Severance Tax Trust Fund and the Local Government Severance Tax Fund. The trust fund contains a perpetual base account and an account used to fund water projects. The local government fund is to be distributed as loans and grants to local governments to address the “social or economic impacts of mineral production.”

In 1987, Freeport-McMoRan closed its Climax molybdenum mine in Leadville, Colorado, laying off

**Natural Gas Depletion Tax Rates**

State	Rate
Alaska	25 % on producer’s profits
Montana*	15% of market value
Alabama*	10 % of market value
Oklahoma	7.95 % of market value
Texas	7.5% of market value
New Mexico	7.1% of market value
Wyoming	6% of market value

\*Highest rate in a range of rates



thousands of workers. In Lake County assessed property value fell from \$240 million in the mine's final months of operation to just \$50 million shortly after it closed. The mine, which had been paying 80% of the county's property taxes, shifted that burden back to its jobless residents once it closed. Leadville and Lake County went from having the highest per capita income in the state to now being among the poorest counties in Colorado.<sup>35</sup>

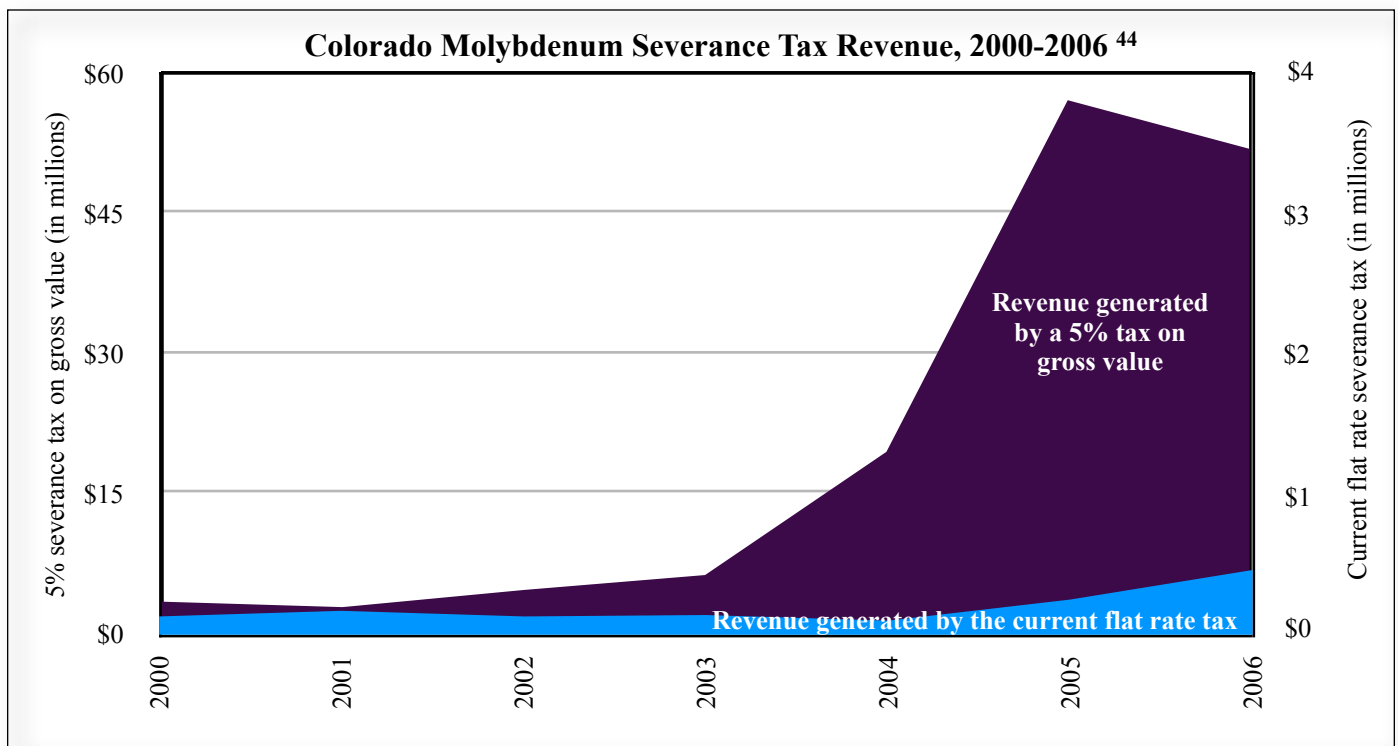
On top of the enormous economic depression imposed on Leadville, the town found itself in the center of an environmental catastrophe in February 2008. A state of emergency was declared when toxic water that had built up in a mine drainage tunnel was threatening to burst. The EPA is spending \$1.5 million to install a well to pump the water out of the tunnel while they search for a long-term fix.<sup>36</sup>

History seems destined to repeat itself for the old mining village. While Leadville will certainly not return to its bustling 1970's form, the town is poised to bend to the will of companies wanting access to the precious ore that built up and then destroyed its environment and economy. The higher molybdenum price has spurred Freeport-McMoRan to return to Leadville and conduct a feasibility study in 2006. Due to the positive results of the feasibility study, in late 2007 the company announced it was going to rebuild the facilities and reopen the mine in 2010. The study reported that there were 500 million pounds of recoverable molybdenum, with estimates of an additional 570 million tons at a lesser concentration.

The mine is projected to produce an annual target of 30 million pounds of molybdenum at a production cost of \$3.50/lb—nearly ten times less than current prices. The mining company expects that it will only hire 350 people, far less than thousands it once employed.<sup>37</sup>

The new version of the Climax mine is projected to sever 28,000 tons of molybdenum ore per day. With the current severance tax at \$0.05 per ton, taking into account the exemption of 625,000 tons per quarter, the Climax mine will produce an estimated \$385,000 annually in tax revenue. This is not even one tenth of a percent of the total value of the 30 million pounds per year that will be produced. At March 2008 prices the annual value is about \$1 billion. The mine is expected to be open at least 17 years in order to extract the estimated 500 million pounds of recoverable molybdenum, taking \$17 billion from Lake County, and only giving \$6.5 million back to local and state government.

The next time Climax closes, only 350 people will be out of jobs, but as their community knows, the economic and environmental hit on the mine will linger. According to Colorado's allocation structure, of that \$6.5 million, Leadville would only be able to acquire half, \$3.25 million, at most, in grants or aid. To put this in perspective, that \$3.25 million wouldn't even be enough to provide a long-term solution for the mine drainage tunnel, which is estimated will take \$5 million to remedy.<sup>38</sup>



It is obvious that serious changes need to be made to Colorado's molybdenum severance tax. With prices high, trending even higher, the tax needs to be tied to the gross value. A modest 5% gross value severance tax would add \$51 million in revenue each year the mine is open. Even with the current allocation structure, that would be a significant sum of money available for communities, like Leadville, to prepare for the aftermath.

## Conclusion

Depletion tax rates as high as 10% to 25%, would not stifle companies' interests in oil, natural gas and most precious metals. However, the bulk of states' rates do not even approach half of those levels. More problematic, current tax structures do not allow for the possibility to capitalize on rising prices or high profits. Many states are still using outdated production-based flat taxes. The future of depletion taxes should be focused on progressive taxes based on profits (for energy minerals) to ensure the tax is not passed through, and taxes on total production value (metals and ores) to keep tax revenues comparable to current prices. By establishing permanent trust funds, states can capture the growth of the natural resources prices, and provide a consistent revenue stream many years after the resources have been exhausted.

Technological advances and higher prices will continue to push resource exploration and ability of companies to recover more reserves. Without parallel increases in tax systems, as companies move in they provide less for the state and local governments than they did in the past. Profits will stream from the earth of towns, cities, and regions into the pockets of those with no vested interest in replacing value that is irretrievably lost.

States need to adjust, or enact effective depletion tax policies while prices are high, production outlook is good, and the natural resources still exist. States have the ability to alleviate all or some of their budget woes with revenue provided by appropriate depletion tax policies. The environmental and economic costs imposed by the mining and drilling industries entering and leaving can be averted through the proper use of depletion taxes.

### Estimated Annual Revenue With New Depletion Tax Structure (in millions) <sup>45</sup>

State	Resource	Current Structure	Gross Production Tax	
			10 % Tax	15% Tax
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## References

- <sup>1</sup> “27 States Faced Total Budget Shortfall of At Least \$47 Billion in 2009; 4 Others Expect Budget Problems.” (Center for Budget and Policy Priorities, May 2008). Accessed 5/21/08 at <http://tiny.cc/9DJXK>
- <sup>2</sup> “States Put Hiring On Hold. Slow Economy Means Shortfalls, Huge Budget Cuts.” *Fort Wayne Journal Gazette*. (May 2, 2008).
- <sup>3</sup> Zelio, Judy. “State Energy Revenues Gushing.” (National Conference of State Legislatures, January 2006). Accessed 4/18/08 at <http://tiny.cc/Mipui>
- <sup>4</sup> “USGS Release: 3 to 4.3 Billion Barrels of Technically Recoverable Oil Assessed in North Dakota and Montana’s Bakken Formation—25 Times More Than 1995 Estimate —.” (April 2008). Accessed 4/18/08 at <http://tiny.cc/dgt1b>
- <sup>5</sup> In 2007, Alaskans received \$1.6 billion in royalties, of which a large portion contributed to their Permanent Fund. Also in 2007, thirty-four states received a total of \$1.9 billion in revenue from mineral production on federal lands. These disbursements represent the states’ cumulative share of revenues collected from mineral production on federal lands located within their borders, and from federal offshore oil and gas tracts adjacent to their shores. Revenue Sources Book. (Alaska Department of Revenue: Tax Division, Fall 2007), 32-34. “Press Release.” (Mineral Management Service, December 2007). Retrieved on 4/29/08 from <http://tiny.cc/gQIb0>
- <sup>6</sup> “Understanding Nevada’s Net Proceeds of Minerals Tax.” (Nevada Taxpayers Association, 2007-2008).
- <sup>7</sup> “Memorandum, Allocation of Severance Tax and Federal Mineral Leasing Revenue.” (Colorado Legislative Council Staff, June 2007). Retrieved 4/11/08 from <http://tiny.cc/VG0lh>
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- <sup>10</sup> “Annual Report of the Treasurer.” (Wyoming State Treasurer, 2007), 20.
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- <sup>12</sup> “Revenue Sources Book.” 32.
- <sup>13</sup> “State Government Tax Collections.” (United States Census, 2007). Accessed 4/16/2008 at <http://tiny.cc/lkYpf>
- <sup>14</sup> Calculation: 244 million barrels produced multiplied by \$65.07, 2007 average first purchase price of California oil. “2007 Preliminary Report of California Oil and Gas Production Statistics.” (Department of Conservation: Division of Oil, Gas, and Geothermal Resources, January 2008), 1.
- <sup>15</sup> ABX3 9, California, Legislature. (2007-2008). Retrieved May 1, 2008, From <http://tiny.cc/5cPFm>
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- <sup>17</sup> “Riley: Natural Gas Tax Vote ‘Unconscionable.’” *Mobile Register*. (March 28, 2008).
- <sup>18</sup> ALA. Dept. of Revenue 810-8-6-.01 (6), Accessed May 14, 2008, at <http://tiny.cc/mUyMq>
- <sup>19</sup> 68 OKLA. STAT. § 1009(F)
- <sup>20</sup> “2006 Annual Report.” (New Mexico Energy Minerals and Natural Resource Department, 2006), 35.
- <sup>21</sup> Ginsburg, Robert. “Mining Taxes in Ten Western States.” (Center on Work and Community Development, April 2008). Retrieved on 4/21/2008 from <http://tiny.cc/5w2MH>
- <sup>22</sup> Calculation: \$1.9 billion multiplied by 15% “2006 Annual Report.” 34.
- <sup>23</sup> Ginsburg
- <sup>24</sup> “Major Mines of Nevada, 2006.” (Nevada Bureau of Mines and Geology, Nevada Division of Minerals, 2007), 23.
- <sup>25</sup> “Nevada Annual Report, 2006.” (State of Nevada Department of Taxation, 2007), 69.
- <sup>26</sup> “Understanding Nevada’s Net Proceeds of Minerals Tax.”
- <sup>27</sup> “Nevada Annual Report, 2006.”
- <sup>28</sup> In April 2008 the North Dakota Department of Mineral Resources released a study that estimated 167 billion barrels of oil resides in the North Dakota section of the Bakken Formation. Using current drilling technologies, 2.1 billion barrels is recoverable. “N.D. Study Estimates 167 Billion Barrels of Oil in Bakken.” *Bismark Tribune*. (April 29, 2008).
- <sup>29</sup> North Dakota Century Code (N.D.C.C.) § 57-51.1-03(9)
- <sup>30</sup> “Bakken Formation Oil Field has up to 4.3 Billion Barrels.” *Great Falls Tribune*. (April 11, 2008).
- <sup>31</sup> “Unconventional Natural Gas Reservoir in Pennsylvania Poised to Dramatically Increase U.S. Production.” *Science Daily*. (January 21, 2008). Accessed on 4/14/08 at <http://tiny.cc/AfvjL>
- <sup>32</sup> “Ax Taken to State Jobs.” *Columbus Dispatch*. (February 1, 2008).

<sup>33</sup> These calculations assume the following distribution of natural gas in the Marcellus: 20% in Ohio, New York and West Virginia; 40% in Pennsylvania.

<sup>34</sup> “Colorado Mineral and Energy Activities, 2006.” (Colorado Geological Survey, Colorado Department of Natural Resources; 2007), 39. Retrieved on 4/24/08 from <http://tiny.cc/DG7DW>

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<sup>39</sup> Data for the chart was derived from the following sources: “Alaska Annual Report, 2007.” (Alaska Tax Division, 2007), 52.

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<sup>40</sup> “Revenue Sources Book.” 32.

<sup>41</sup> Oil production data taken from “Crude Oil Production.” (Energy Information Administration). Accessed on 5/22/08 at <http://tiny.cc/TT0F5>

<sup>42</sup> “2006 Annual Report.” 35.

<sup>43</sup> “Major Mines of Nevada, 2006.” 23.

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<sup>44</sup> “Colorado Mineral and Energy Activities.” 40.

<sup>45</sup> The calculations and references for each state projection aside from Colorado are mentioned in the text.

“Colorado Mineral and Energy Activities.” 39.

“Colorado Annual Report 2007.” (Colorado Department of Revenue, 2007), 74.

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