Summary: An Assessment of U.S. Federal Coal Royalties
Current Royalty Structure, Effective Royalty Rates, and Reform Options

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Introduction

This is an executive summary of a larger report that analyzes how revenues from federal coal are obtained, reviews problems with the current system, estimates current effective royalty rates, and offers several reform options.

Coal extracted from federal land is an important source of energy and revenue in the United States. The U.S. government owns roughly one-third of total coal reserves. Bonus payments and royalty revenue from minerals extracted from public lands and waters represent the largest non-tax source of income for the federal government. Despite the importance of this revenue stream, little information is available to describe accurately the return to the public from taxation of federal coal resources. This paper analyzes how revenues from federal coal are obtained, estimates current effective royalty rates, reviews problems with the current system, and assesses policy reform options.

Challenges with Royalty Structure

The Bureau of Land Management (BLM) and the Office of Natural Resources Revenue (ONRR) administer the federal coal leasing program and have multiple and diverse objectives: a fair return for U.S. taxpayers, economic development and jobs, energy costs and security, and environmental protection. Royalties are the owner's share of the resource value, but the ONRR often accepts less than full value—the effective royalty rate is 4.9 percent of the gross market value of coal extracted between 2008 and 2012 (compared to the average statutory rate of 12.3 percent). Evaluating the effective returns earned by the ONRR under the current royalty structure reveals several problems:

- The first problem is transparency. The royalty rates applied to each lease, prices used to determine royalties due, and allowable cost deductions are all considered proprietary and data are withheld. As a result, there is little outside oversight of the royalty structure, engendering uncertainty about how the government is balancing competing interests.
- Second, the cost of administering the current royalty structure is high. Royalties are often based on non-market transactions where prices are uncertain and the ONRR uses complex valuation methods that are expensive to administer.
- Third, coal valuation procedures raise questions about fair returns to the U.S. government. The ONRR values coal for royalties at the first point of sale at or near the mine, limiting royalty collections when the coal is remarketed at significantly higher prices, including for export.

Current U.S. Coal Royalty Structure, Valuation Policy, and Reform Options

BLM LEASE SALE

A **Bonus** is paid to the BLM to win a lease at a competitive sale.

MINING

Currently, **Royalties** are based on the gross value of coal, typically as it leaves the mine.

TRANSPORT TO MARKET

Transportation Costs are deductible from the first market sale to "net-back" to the mine price.

CONSUMPTION

The **Market Price** is the total delivered price of coal including transportation costs and marketing.

CURRENT ROYALTY STRUCTURE: Royalties Based on Mine Price

CURRENT STRUCTURE
Current Mine Price **$15.59**
Royalties **$1.70/ton**
Effective Royalty Rate **4.9%**
Total Collections **$3.9 Billion**

PROPOSED ROYALTY STRUCTURE: Royalties Based on Market Price

REVENUE NEUTRAL	NET PRICE	GROSS PRICE
Gross Market Price **$34.43**	Net Market Price **$17.79**	Gross Market Price **$34.43**
Royalties **$1.70/ton**	Royalties **$2.09/ton**	Royalties **$4.14/ton**
Effective Royalty Rate **4.9%**	Effective Royalty Rate **6.1%**	Effective Royalty Rate **12.0%**
Total Collections **$3.9 Billion**	Total Collections **$4.8 Billion**	Total Collections **$9.5 Billion**

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Royalty Reform Options

A range of alternative policy options would remedy problems with the current system and offer benefits to the U.S. public. The figure on the next page illustrates the current coal royalty structure, valuation policy, and returns, and illustrates the projected outcomes of reforms that would value coal for royalties using market prices. Changing the point of valuation would achieve several benefits:

- Moving the point of valuation would improve transparency. Market prices of coal are known. The BLM and the public would have easy access to coal valuation data.
- Reform would greatly simplify the valuation process and reduce administrative costs.
- Reforming the royalty structure also makes it easier to assess what a fair return is, and balance these returns against other competing interests.

The figure compares the current royalty structure to three reform options. For current policy, the analysis uses actual coal sales and royalty collections between 2008 and 2012. The figure shows that the effective royalty rate over this period was 4.9 percent, and royalty collections averaged about $1.70 per ton. The price used to determine royalties averaged $15.59 for all federal coal sales.

The first reform option would be revenue neutral, achieving transparency and administrative cost reductions without changing royalty collections.

The second reform option shows that had coal valuation been based on net market prices during the same period, the effective royalty rate would have been 6.1 percent, royalty collections would have averaged $2.09 per ton, and total collections more than $850 million higher ($4.8 billion in total revenue compared to $3.9 billion in revenue under the current system). Royalty collections would have been higher because the average net market price paid for coal delivered from states with federal leases between 2008 and 2012 was $17.72, about two dollars per ton higher than the current reported sales price. The difference is an estimate of the margins (or profits) earned by affiliated and non-affiliated brokers that paid a low price at the mine for federal coal, and then remarketed this coal at higher domestic and export market prices.

The third reform option shows that had coal been valued for royalties using the gross market value—meaning transportation costs would no longer be deductible expenses—the effective royalty rate would have been 12 percent and average collections per ton would have been about $4.14 per ton. Total royalty collections would have been about $5.5 billion higher than actual royalties.

Interpreting Results

The Office of Natural Resources Revenue (ONRR) is currently proposing to change the regulations governing valuation of coal for royalty purposes. While this paper does not specifically address the rulemaking process, the results can inform the public comment and ultimately the rule that ONRR adopts.

The ONRR proposes to retain royalty valuation at or near the lease, using gross proceeds from the first arm's-length transaction (or market sale) as the basis for royalties. The rule is specifically designed to address situations where the first sale is to an affiliate broker—in other words, it is not at arm's-length and may be structured only to avoid paying royalties on the higher market value of federal coal. In making this change, ONRR would use the first market sale to determine royalty valuation.

One way to interpret our results is that the rule would effectively change royalty valuation to the net market price of coal (if transportation costs are still deductible). However, non-affiliated brokers may still play an important role in the coal market, and the rulemaking would do little to affect royalty collections. Our results define the upper end of the possible outcomes that could range from very little change up to an increased royalty payment per ton averaging about $0.18 for federal coal in Montana and Wyoming (after accounting for state severance tax and corporate income tax interactions).

If the rulemaking additionally limits transportation costs deductions to 50 percent of actual costs, the effect of the rulemaking could be an average increase in royalty payments per ton of about $0.85 per ton (after accounting for state severance tax and corporate income tax interactions). Again, this estimate should be considered the upper end of costs that would accrue only if closing the affiliate broker loophole results in mines in Montana and Wyoming marketing all federal coal directly to consumers. If, however, brokers remain an important player in the market structure (and they still retain a cost advantage over a mine marketing coal directly by avoiding royalty payments), then changing royalty valuation and transportation deductions will have little, if any, effect on collections.

Data Withholdings and Error

Throughout this report we endeavor to use publically available data. We do this for two reasons: so that our methods and data can be easily assessed and replicated; and to document the challenges created by federal data withholdings. Understanding the current coal royalty structure is limited primarily by data availability. Detailed descriptions of data, methods, and results are presented in three appendices. In Wyoming, coal sales from federal leases account for 93 percent of all coal sales in the state. As a result, we are more confident in estimates of effective tax rates in Wyoming compared to results in states where sales from federal leases account for a small share of all coal sales in the state.

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About Headwaters Economics

Headwaters Economics is an independent, nonprofit research group with the mission of improving community development and land management decisions in the West: http://headwaterseconomics.org/.