

A Direct Valuation System for Federal Coal Royalty Administration

Dan R. Bucks
Former Director, Montana Department of Revenue

December 14, 2018

Preface

The ideas in this paper are based on lessons learned from a career spanning four decades dealing extensively with non-arm's length pricing and valuation issues in the context of natural resource severance taxes and mineral royalties, corporate income taxes, and property taxes. The author's experience with these issues occurred through serving as Deputy Director of the Montana Department of Revenue, 1981-1988; Executive Director of the Multistate Tax Commission, 1988-2004; Director of the Montana Department of Revenue, 2005-2013; and policy consultant and contributor to State Tax Notes, 2014 to the present.

In general, the author has concluded that governments have typically been unsuccessful in correcting non-arm's length problems on a transaction-by-transaction basis for corporate income taxes. Governments have achieved only mixed results in dealing with these problems in the context of severance taxes and public mineral royalties. Finally, governments have been highly successful in solving non-arm's length issues in the property tax arena—provided that they develop quality data, employ state-of-the art statistical methodologies, and rely on maximum transparency to ensure the integrity of the system and its continuous improvement over time. It is the central insight of this paper that the Department of the Interior should adopt the successful methods developed in the property tax field to achieve the most accurate and equitable royalty system possible.

A Direct Valuation System for Federal Coal Royalty Administration

Dan R. Bucks
December 2018

This paper is a response to a request from the Coal Working Group of the Department of the Interior's Royalty Policy Committee for a description of operational characteristics of a proposed direct valuation system for federal coal royalty purposes.¹ The author has discussed the benefits of such a system on several occasions in the past.² As requested, this paper provides seeks to provide a greater understanding of how a direct valuation system would work in practice.

The material presented here will likely prompt further questions and discussion. Because the author is unable to anticipate all the questions and comments that might arise, he welcomes the opportunity to discuss with those who consider this proposal any issues they may identify.

The proposal for direct valuation for royalty purposes of coal produced on federal lands is aimed at achieving these goals:

1. Valuing federal coal fully, reliably and equitably at fair market value,
2. Reducing costs of compliance and administration,
3. Increasing certainty for coal lessees, Interior and the public,
4. Achieving transparency of royalty administration.

Among these goals, transparency is uniquely important. It is a preeminent goal in its own right because it would enable the owners—the American people—to understand what they are being paid for their coal and why. In addition, transparency is also the critical means for ensuring that the other three goals are consistently achieved.

The current system of producer self-reporting of coal proceeds fails to fulfill these goals. Thus, a fresh approach, rooted in well-tested valuation practices, is needed for coal royalty administration.

¹ The term, "direct valuation of coal" is generally synonymous with, but slightly broader than, what is known in royalty policy circles as a "price index" system. Both terms include use of a schedule of statistically valid arm's length sales prices to value current coal production for royalty purposes. The term, "direct valuation of coal," is the preferred usage in this paper because it retains the link to property valuation practices. "Direct valuation of coal" does not entail valuing coal as an underground deposit. The coal valued for royalty purposes will remain, as now, the coal produced during a royalty period.

² For example, see: Dan R. Bucks, Written Testimony, Before the Subcommittee on Energy and Mineral Resources, Committee on Natural Resources, U.S. House of Representatives, Oversight Hearing, "Ensuring Certainty for Royalty Payments on Federal Resource Production," December 8, 2015.

Relevant Shortcomings of the Current Royalty Reporting System

This section discusses problems with the current coal royalty system that are relevant to the design and operation of a direct valuation system.

The previous Royalty Policy Committee established under the Bush Administration identified non-arm's length transactions as a source of problems in coal valuation under the proceeds system. Its Subcommittee on Royalty Management, in an extensive report issued in December 2007, described the non-arm's length problems as follows:

For example, coal may be sold to a power plant where there is common ownership of the mine and power plant. The coal could be sold at less than fair market value with the lost profit gained in the sale of electricity. Thus the government would not be receiving the appropriate royalty on coal.³

The Bush-era Royalty Policy Committee considered these non-arm's length coal problems of sufficient urgency that it recommended the Interior Department propose rules within 9 months (the end of FY 2008) to address them.⁴

While this statement of problems concerning non-arm's length transactions is clear and direct, the problems themselves are mired in accounting complexities. Further, their optimal remedy cannot be attained within the framework of the existing producer proceeds reporting system.

Substantial accounting complexities arise because transactions among affiliates are often not limited solely to the sale of coal but are intertwined with transactions and accounting entries for (a) other flows of goods and services among the affiliates and (b) the assignment of costs for joint operations and overhead.⁵ Many of these items do not have clear market counterparts. For simplicity we will refer to these as "controlled transactions." The issues involving controlled transactions are further complicated because they can involve items that are deductible from coal proceeds and items that are not deductible. That circumstance creates an incentive for producers to maximize deductible amounts and minimize those that are not.

A word of caution is needed here. It is too easy to assume that producers handle controlled transactions in an "abusive manner" by deliberately and improperly overstating deductions or understating prices. While some such cases occur and need correction, the more vexing

³ Subcommittee on Royalty Management, "Report to the Royalty Policy Committee: Mineral Collection from Federal and Indian Lands and the Outer Continental Shelf," U.S. Department of the Interior, December 17, 2007, p. 72.

⁴ *Id.*, Recommendation 4-27, p. 73. The full RPC ratified this subcommittee recommendation in January 2008.

⁵ For example, the author has dealt directly with several mineral production cases where disputes arose over accounting issues among corporate affiliates dealing with the allocation of overhead costs, the level and assignment of transportation costs, and the determination of other potential deductible costs. In these cases, the accounting treatment among affiliates reduced proceeds reported by producers for tax purposes.

problems arise from the range of permissible accounting discretion that the proceeds system inherently allows producers to exercise. Focusing on allegations of “abuse” can divert attention from the real culprit, which is the deeply flawed proceeds system itself.

Producers may stay within the range of allowable discretion and comply with technical rules and accounting standards but still report net amounts for coal values that are less than market value. Why is there a “range of allowable discretion” that producers can exercise in accounting for controlled transactions—a process that can distort the reported values for coal? Because these are non-market transactions, producers can choose among alternative accounting methods to determine the amounts assigned to each transaction. There often is no single, correct or best answer to how to account for the controlled transactions. Instead, there are multiple, defensible answers.⁶ Thus, producers can choose from among a range of accounting methods that, on net, maximize shareholder value by minimizing the residual value of the coal and the amount of royalties they pay.⁷ The cumulative result of those accounting decisions is that, while producers comply with a series of technical, accounting procedures, the end result can too often fail—given producer responsibility to shareholders—to meet the overarching standard of market value for coal required by law.

In these circumstances, isn't it the job of the Department of the Interior to audit and adjust the producer's reports to achieve market value for coal? Yes, that is Interior's job, but one that is difficult to fulfill. Interior is not alone in this regard. The Internal Revenue Service and numerous state tax agencies often fail to correct controlled transactions in the context of corporate income and state severance taxes.

One approach would be for Interior to try to “re-engineer” all the accounting decisions made by the producers for controlled transactions and eliminate their impact on the residual, reported value of coal. The sheer complexity and high volume of transactions, legal structures, contract arrangements and accounting entries that are often involved makes this approach an almost impossible task. In the context of corporate income taxation, former U.S. Senator Byron Dorgan (D-ND), who had previously served as North Dakota's tax commissioner, frequently described adjusting individual non-market transactions as the accounting equivalent of “unraveling a large bowl of spaghetti.” Even if it were possible to do this unraveling, such efforts would ultimately fail because, again, there is no single, correct answer to valuing non-market transactions through accounting conventions. Public agencies and producers end up in a circular dispute over what is the “right answer” when, objectively, there is no such answer.

⁶ Nearly a century ago, a prominent economist of the time, John Maurice Clark, wrote the classic text on this topic and described in great detail that there were a host of alternative methods, each of them defensible, to account for overhead costs and other joint costs shared across integrated enterprises. Clark's book, addressed to both economists and accountants, illustrated that there was essentially no single, correct accounting answer in a variety of common business circumstances. John Maurice Clark, *Studies in the Economics of Overhead Costs*, Chicago, University of Chicago Press, 1923.

⁷ Any so-called “system,” such as producer self-reporting of proceeds, that does not consistently produce a single, correct answer at each of its intermediate and final stages cannot really be considered a system at all—or at least one that produces reliable and uniform results.

Instead of unraveling the spaghetti bowl, a more manageable audit approach is to measure the coal values reported by producers against arm's length sales for comparable coal—and to do the same for the most efficient, arm's length market values of transportation deductions. However, Interior does not develop a continuous and comprehensive, market-wide database of valid arm's length sales for each type and quality of coal as production occurs or for transportation costs. Instead, audits are conducted years after production, and auditors typically assemble an ad hoc, limited number of arm's length sales for the coal and periods under audit. Producers are able to counter the auditors' chosen sales with limited examples of arm's length sales of their own choosing that support lower values. Without valid, comprehensive arm's length data that meets standards of statistical accuracy, disputes over audit assessments devolve into debates over a few contrasting cases of sales too inadequate to reliably establish market values. These audit disputes yield either inconsistent, case settlements or random and unpredictable appeal decisions.

Of course, if Interior did develop a comprehensive database of statistically-valid arm's length coal sales and least-cost transportation rates, it would not need to wait for several years to apply the statistical conclusions from the data in long-deferred audits. Delaying the application of such data for years still produces a certain level of uncertainty for producers and a loss of understanding by all parties of facts present at the time of production. Instead, it is possible to apply a high quality, market sales database to the task of valuing coal as it is produced—and thereby cutting administrative costs, reducing producer inequities, and eliminating accounting uncertainties. That is the key idea developed in this paper.

There are a few other observations that need to be made about the proceeds system. It is sustained, in part, by an unjustified "illusion of precision." This illusion arises because of the notion the whatever the producer receives "must" be the value for that coal. The discussion above about the range of accounting methods that are allowable under proceeds reporting should, by itself, burst this precision bubble. Further, the value reported by each producer is only a single data point that lacks the robust statistical validity of an alternative system that would rely on multiple, valid data points for a given type and quality of coal.

There other reasons to doubt the precision of the proceeds system. Mining companies are human institutions and, as such, make mistakes like any other organization. The companies, due to managerial error, may sell coal at prices that are too low or employ transportation methods more costly than the most efficient means available. In these situations, the proceeds system improperly subsidizes error and waste at the expense of the public. All other factors being equal, a producer of the same type and quality of coal that does not make these managerial errors will pay more in royalties than the less efficient producer. That result is unfair to both the efficient producer and the public.

The proceeds system does not provide clarity, certainty or equity for anyone involved in the process. The producer reports proceeds, but neither the producer nor Interior will know for several years whether reported amounts will be considered acceptable. To the degree the audits are conducted through an ad hoc assemblage of comparable sales, the

outcome of the audits cannot be predicted. Further, because the self-reporting of proceeds operates in secret, the public that owns the coal is kept in the dark about the entire process and its outcomes. That secrecy prevents producers and the public from evaluating whether like coal sold at comparable prices pays an equal amount of royalties. Indeed, because the proceeds system allows producers to make confidential choices among different accounting methods, it is unlikely that the system achieves equity in valuations.

The real lesson is this: Given that the overall test for the accuracy and equity of royalty payments is whether they conform to the full and fair market value of the coal, the royalty system should be firmly based on and organized around valid, arm's length coal prices. The assessment of royalties should not take a multiple year, secret detour through a flawed and convoluted proceeds system. The marketplace—and not a series of choices among accounting conventions and undisclosed subsidies for inefficiency—supplies the right answers to coal valuation issues and does so in public view.

So, we turn here to considering the details of directly valuing coal through arm's length data generated by the marketplace for coal.

Features of a Direct Valuation System for Coal

The system described here for direct valuation of coal is rooted in the federal law on coal royalties, which reads:

A lease shall require payment of a royalty in such amount as the Secretary shall determine of not less than 12 ½ per centum of the value of coal as defined by regulation, except the Secretary may determine a lesser amount in the case of coal recovered by underground mining operations.⁸

The plain reading of this statute places the responsibility for the determination of a royalty payment directly with the Secretary of Interior. That determination extends to the two parts in the payment equation: a rate and a base consisting of the “value of coal.” How the Secretary would exercise the duty to make these determinations is to be defined by regulation. Significantly, there is no hint in this language of delegating the initial determination of value to the lessee. Nor is there any mention of substituting “proceeds received by the lessee” for “value” in the royalty equation.

The reading of this language as a charge to the Secretary to directly value coal is strengthened by reviewing revenue statutes across the nation and among different levels of government. When this language is compared to income, sales, gross receipts, mineral proceeds and severance, and property tax laws, it is clear that this federal coal leasing law shares common language only with property taxes. Property taxes are based on the “value of property” and are administered by public authorities directly assessing that value. All

⁸ 30 USC 207 (a).

other revenue laws are different. They typically specify and authorize in detail a self-reporting system under which those individual or business payors file returns that determine in the first instance and self-report the income, sales or proceeds subject to tax.

While there may be other interpretations of the federal coal leasing law, it is long overdue for Interior to take seriously this obvious plain reading of the law. That is especially true given the major problems that exist in royalty administration that can be traced to the use of the self-reporting system for coal proceeds.

System Patterned After Best Practices for Residential Property Tax Valuation: Under a direct valuation system, Interior would assess the value of coal produced on federal lands as the plain language of the Mineral Leasing Act provides. Interior would assess the value of produced coal using the best practices that property assessors employ to determine the value of residential property for property tax purposes.⁹

The valuation of residential property using comparable sales data and sophisticated statistical modeling has advanced to the point where, given sufficient data, highly accurate results are achieved even under challenging market conditions. Through these well-established statistical procedures, Interior can use “market baskets” of valid, arm’s length sales prices to determine values for different types of coal on an accurate, equitable and uniform basis—and more so than can be attained through the proceeds system.

The direct valuation of coal using the comparable sales method may work even better in terms of accuracy and efficiency than it does for residential property for these reasons:

1. Coal is a simpler, more homogenous product than residences which are considerably more diverse in terms of type, size, construction quality, market location, and community characteristics. That makes defining market categories and securing comparable sales markedly easier for coal than homes and helps generate highly accurate results.
2. In relative terms, there is considerably more sales data for coal than for homes as a percentage of the total product in existence. Coal is produced continuously to be sold for use or seasonal inventories. Homes are often held by their owners for years and even decades. Thus, the turnover rate is immensely greater for coal than homes. Coal markets produce continuous sales data covering a large share of the total stock of marketable coal, while housing markets produce current data for only a fraction of the housing stock. The result is that for coal the quantity, quality and timeliness of market data is infinitely greater than for homes, which translates, again, into accurate valuations.

⁹ In making this connection to property assessment, it is important to understand that Interior would value coal that is extracted, not the underground coal deposit.

3. Related to the previous point, the availability of a continuous, high volume of data makes it possible to value coal for short periods, such as quarterly, as opposed to the long valuation periods for homes that, at best, are annual and in many case may stretch over years. Consequently, it is possible to develop a contemporaneous valuation system for coal that is not possible for homes. Interior could gather coal price data for a quarterly period and, at its close, complete the statistical valuation process. Producers can calculate and pay royalties shortly thereafter. In contrast, property assessors often use home price data that is one to several years old to estimate values several months into the future. While modern statistical models can achieve accuracy in home valuations under those conditions, avoiding the need to project old data to a future date makes the proposed coal valuation process both simpler and more accurate. Further, repeating the valuation process quarterly also builds feedback loops of information that enable continuous improvements in the accuracy of valuations.

The fact that property tax appraisers using best practices can achieve a high level of accuracy under conditions considerably less favorable than exist for coal suggests that Interior can succeed in achieving full and fair market valuations of coal by applying these same methods.

Summary of the Coal Direct Valuation System: To establish arm's length market values for coal, Interior would collect and analyze price, market condition and physical characteristics information on a continuous and comprehensive basis. Interior would select arm's length sales from the collected data and compile an arm's length database for valuation analysis. The database would consist of both arm's length sales made at mine locations and at distant sales destinations. Interior would apply statistical models to the arm's length database to determine the median market values for coal for a similar type of coal sold under similar market circumstances on a periodic basis—most likely quarterly. Interior would publicly publish the median coal values for all categories of coal as established at the mine and at distant locations (with the latter subject to transportation cost deductions).

Interior would also gather data on coal transportation costs for relevant modes of transport from mines to destination locations to establish the most efficient, least-cost transportation rates for each relevant transport mode from mine locations to arm's length sales points. These transportation would be published with the coal values and used by producers to adjust the published coal values for distant sales back to a value at the mine.

Producers would use published arm's length prices and, if sales occur beyond the mine, the published transportation rates, combined with their self-reported production volumes and washing costs to calculate and make periodic royalty payments based on "at mine" values.¹⁰

¹⁰ The author supports eliminating the washing cost deduction because it is a final extraction cost necessary to bring coal to the point of a marketability. The coal producer should bear that cost, not the public. However, the washing cost issue is separate and distinct from the direct valuation system described here. Because washing is currently an allowable deduction, this description explains how that deduction would continue to be applied within a direct valuation system.

After producers make royalty payments, Interior would prepare a timely report to the public for the completed payment period on the amount of coal produced, royalty values and payments. From a transparency standpoint, this report would ideally be made on a lease-by-lease basis, but would at least occur at the level of the established categories of coal in each production region.¹¹ Transparency is an integral feature for insuring the integrity and accuracy of the system and the values it establishes. By reporting on the full range of coal values across all coal and market categories, the public and producers alike can evaluate the equity and effectiveness of the valuation system. With access to the entire range of values, producers will be better able to determine whether to file appeals of values that apply to them.

Producers would, of course, have the right to appeal their valuation assessments just as they currently do with regard to audit assessments. The key difference would be that the appeals process would be general open and transparent, with confidentiality provided for proprietary data.

Interior would retain a modest review process to verify producer calculations, production volumes, physical characteristics of the coal, and washing deductions. This review process would involve a fraction of the resources devoted to current proceeds audits.

Note on Required Resources: After the initial development and transition process for the direct valuation system, the resources required to operate it should be significantly less than for the current proceeds system. Collecting sales prices data, selecting and validating arm's length sales, producing coal prices and transportation rates statistically, and reviews of producer calculations should require fewer resources than the current proceeds system. The proceeds system collects more information from producers, requires Interior to examine more complex and diverse producer returns, and imposes extensive audit costs on all parties as compared to the direct valuation system. The new valuation system will reduce burdens on Interior and producers alike through:

- the logic and relative simplicity of focusing on arm's length prices,
- transparency that creates understanding and reduces conflict, and
- the efficiency of reaching conclusions timely in relation to when production occurs.

Nonetheless, the initial development of any new systems entails significant upfront costs. However, that upfront cost should be offset by the relative efficiency and convenience of the new system once it is operating.

¹¹ For an explanation of "categories of coal," see the discussion under "*Key Details of a Direct Valuation System*," item 3.b.

Key Details of a Direct Valuation System: This subsection provides additional detail for operational elements of the proposed system.

1. Data Collection and Sources

Direct valuation of coal by Interior will require a data collection system covering (a) sales of both federal and non-federal coal and (b) transportation rates for delivery of coal from its sources to its destinations. The system described here is patterned after high quality systems of data collection used for residential property tax valuation.

Data on both federal and non-federal coal would be used to increase the amount of data for statistical modeling, which increases the accuracy of the valuation for any given type of coal.

For coal sales, the items to be collected would include both sales price data and sufficient supporting documentation to (a) determine whether the coal was sold in a valid arm's length sale and (b) classify the sale based on the physical attributes of the coal and market circumstances of the sale. For federal lessees, the supporting documents would include sales contracts for federal coal mined up through the first arm's length sale.

For transportation costs, items to be collected would be costs per ton of coal to relevant market locations and any supporting documentation to ensure that the costs reports are for arm's length transactions and do not include services bundled with transportation. For federal lessees, the supporting documents, again, would include transportation contracts.

The sources for coal and transportation cost information would include, as appropriate and necessary, the following:

- a. Federal lessee reports, including captive affiliates, to Interior,
- b. Non-federal coal producer reports to states in the cooperative federal mineral royalty program comparable to the reports under item a,
- c. Data from the U.S. Energy Information Administration,
- d. Information available from state utility regulatory agencies on coal sales,
- e. The U.S. Surface Transportation Board for supplemental transportation cost information only.

To the extent that there is overlap or duplication, Interior can coordinate the information from the various sources to secure the desired information in the least costly way.

The lessee reporting system to Interior would likely be the main source of information. It would include not simply sales price data, but the supporting information that plays a

key role in the verification, analysis and statistical modeling steps described below and transportation cost data.¹²

To increase the accuracy of the statistical analysis, states participating in the cooperative federal mineral auditing program would be asked to shift their federal resources to collecting and analyzing parallel data for non-federal coal that they receive through their coal severance tax systems. The state-collected information for non-federal coal would be identical to the information and supporting documents that Interior would collect from federal coal lessees.

The states would exchange this data and analysis with Interior for use in the direct valuation process. Besides assisting the federal valuation process, this work will also help states improve their own state coal severance tax systems. In the short term, the data generated through Interior's direct valuation system will provide vastly improved arm's length data that states could apply in their own state audits involving non-arm's length data. States could also rely on the data system for audit settlements under which producers making non-arm's length sales would use of the Interior arm's length data for future severance tax periods. In the long-term, states might well consider transitioning their proceeds-based severance tax systems to a direct valuation system.

The U.S. Energy Information Administration has extensive coal price information and transportation cost information that would be useful in the valuation process.

State utility regulatory data most likely would serve as a backup, "as needed" source of information if there were gaps in the primary data sources for prices, transportation rates, or supporting information for particular types or categories of coal.

The U.S. Surface Transportation Board, would serve as an additional source of transportation cost data.

For all the agencies outside of Interior, it is assumed that Interior would establish exchange of information agreements to enable access to information needed for the establishment of coal values and transportation deductions.

2. Data Confidentiality and Transparency Issues

To the extent that any of the collected data and supporting documents is considered proprietary or is designated by law as confidential, those items of data would be held confidential. Any of the collected data that is considered public would be public. Moreover, the data produced from Interior activities would already be public

¹² Interior staff express concerns that somehow a direct valuation system would result in Interior losing access to critical information it now receives from lessees, especially coal sales contracts. That is not a valid concern. Interior retains its authority to require whatever data it needs to achieve full and accurate valuations of coal. Just as they require reports from producers now, they would continue to do so in the future. The reports would include copies of sales contracts because they are critical to the valuation process.

information. Producer reports using that data would also generally be considered public as it is in property tax systems, but potential proprietary issues and their treatment should be considered in the study and dialogue process described here.

The establishment of the direct valuation provides an opportunity to re-assess the boundary lines between proprietary data that is held confidential and data that is public. Standards of confidentiality for the same data vary among governments. Because of the value of transparency to the valuation process, Interior should conduct a public dialogue and decision-making process to re-evaluate the standards of confidentiality applied to the types of data collected in this process. That process should first be fully informed by a comprehensive study of any greater transparency that is allowed for comparable natural resource information in other public and governmental contexts.

In general, the level of transparency for the new system should parallel the transparency of property tax systems because transparency is critical to the accuracy, equity and integrity of the direct valuation system. The purpose of the proposed study and dialogue process should not be to compromise that goal but to clarify the details of the boundaries between data that is confidential and that which is public.

3. Analysis of Data

As with the collection of data, the steps and procedures for analyzing, validating and classifying coal sales are based on direct counterparts used in residential property tax assessment systems.

- a. For determining coal values, the initial step would be to separate, using the supporting information submitted to Interior, arm's length data from non-arm's length data. The non-arm's length data would be set aside and not used for valuation purposes. However, in the case of captive affiliate sales for which the affiliate subsequently sells coal at arm's length, the "first arm's length" sales of the producer's coal would be used. Producers, in their royalty reports, would adjust such sales values to the mine location through a transportation deduction using the least-cost rates established by Interior. All sales initially selected as arm's length sales would be validated by examining supporting data and, if necessary, contacting producers to verify the arm's length nature of each sale. The arm's length sales both at the mine and at a distance would comprise the database for valuation analysis.
- b. Before valuations can be generated, categories for coal of similar types and market circumstances would be established. These coal categories are comparable to the "market neighborhoods" that property assessors establish to classify and subsequently value residential properties based on location, age and predominant physical characteristics of structures, and community and environmental attributes.

Interior would establish categories of coal for valuation based on industry information on coal characteristics and markets, expert advice, and public input. The categories for coal would be based on physical attributes of the coal (e.g., btu value, sulfur content, etc.) and market circumstances (e.g., spot sales vs. long term contracts). For example, five types of coal defined and graded by physical attributes that are sold into (i) spot markets and (ii) under long term contracts would comprise ten categories of coal. While the initial establishment of the categories would be a major effort, adjustments to the categories would become more routine over time.

- c. Interior would apply state-of-art, statistical valuation models to the database of validated arm's length sales prices and produce median sales prices at the mine and at distance locations for each category of coal. The Office of Natural Resources Revenue (ONRR) might initially rely significantly on both external property tax valuation experts and property valuation staff in other Interior offices for the development and specification of these models. Over time, modeling expertise would accumulate in ONRR, with outside experts used only as necessary. The parameters and equations of these statistical models would be published and available for analysis, comment and continuous feedback from the public. Similar methods would be used to establish the least-cost transportation rates for alternative transport modes to all relevant market locations.
- d. As described in the summary, producers would use these median prices, transportation deductions for sales beyond the mine using Interior's least-cost rates, combined their self-reported production volumes and washing deductions to calculate royalties and submit their payments. A modest level of review activity would apply to verify these producer calculations and reports.
- e. Instances can arise where the absence of sufficient arm's length priced data for some categories of coal are insufficient to produce median sales prices that meet standards of statistical accuracy.¹³ There are two backup procedures available to address the "insufficient data" cases. The first, and best method, is to develop statistical analyses of the relationships among median prices among different categories of coal. The resulting statistical functions can be used to extrapolate and fill-in median prices for the "insufficient data categories" from the results for adjacent or closely-related categories of coal. If this first method does not produce reasonable results, Interior can revert to the proceeds method as a secondary fallback, but with greater transparency required of producers to facilitate public evaluation of the results from using this least desirable method.

¹³ There may be cases where a category of coal sales are entirely dominated by captive sales, or unique categories where there are simply few sales. While they are unlikely, they nonetheless could occur.

4. Publication of Valuation Results

- a. After royalty payments are received, at a minimum, Interior would provide a quarterly report to the American people—the owners of the coal—of key data at least at the level of each coal category. That data would include the total value of coal, the amount of coal produced, the total amount and pre-deduction value of coal to which transportation deductions were applied, the total amount of transportation deductions claimed, and the total amounts of royalty paid. Because this information is based on the data generated by and already published by Interior, and the production data will be typically aggregated for multiple mines, the report by coal categories would not be considered confidential.
- b. Ideally, Interior’s reports to the public should be made at the even more granular level of individual mines or leases—instead of simply by coal category. That would bring to the royalty systems to a level of transparency comparable to property tax systems. As a part of the public dialogue and decision-making process regarding data transparency under item 2. above, Interior should thoroughly consider in that process providing the public reports described under item a. to more detailed levels than coal categories. The consideration of the issue is necessary also to resolve the status of “coal category reports” when a category includes only a single mine or lease and the treatment of any items on producer reports using Interior data that may be considered proprietary.

5. Continuous Evaluation of Valuation Accuracy

The steps of validating data, establishing coal categories, and modeling the data through statistical methods should be subject to continuous evaluation and, if necessary, adjustments. Adjustments should be made through the appropriate public process. Based on producer and public feedback or its own data analysis, Interior may discover anomalies in the established values that suggest that the coal categories need to be adjusted or that parameters of the models need adjustment. The system readily accommodates changes of this type, which should be made through a public after the necessary analysis documenting the need for a change is completed.

Additional Uses of Direct Valuation Data and Methods

As noted regarding state coal severance tax administration, there are additional uses of direct valuation data and procedures. States could use the proposed Interior database of median arm’s length sales and least-cost transportation costs to adjust non-arm’s length transactions under audit for state severance taxes. States could reach settlements with taxpayers that would commit them to using the Interior database for future tax returns involving non-arm’s length transactions. Further, states might enact legislation transition from proceeds-based reporting for severance taxes to a direct valuation system.

Even if Interior does not develop a direct valuation system, states could individually or collectively develop such a system among themselves to improve their capacity to effectively address non-arm's length transactions in the severance tax and state mineral royalty contexts.

Interior could also use the coal valuation methodology to enhance the proposed use of natural gas indices for federal royalty valuation purposes. The coal methodologies could be used as a template for developing natural gas price indexes for production regions where no such indices exist—thus, filling in data gaps that currently frustrate the further use of natural gas price indexing for federal royalty purposes.

A Final Note on Transparency

It should be self-evident that the equity and integrity of direct valuation system and the self-correcting capacity of the system are dependent on as much public transparency as possible. That is why at the beginning, this report noted that transparency is both a goal in its own right and a means of ensuring that the other goals for the system are achieved as well.

Another reason transparency is important is that it broadens the public discussion around the details of coal valuation. At present, the discussion of the details of valuation are limited to Interior and its lessees. That process that creates a private realm of discussion and of negotiation between Interior and the lessees. By its nature, the process separates Interior from the public to which it is ultimately responsible—a public that is prepared to support Interior in achieving equity in the valuation of minerals. The direct valuation process creates an opportunity to convert what is now a closed, two-party process into an open discussion.

While Interior may initially view the assumption of responsibility required by a direct valuation system a tall order, it should recall that it will not be alone in the process. Both producers and the public can contribute constructively to the development and operation of the system. Producers have a stake in achieving a process that is more efficient and less costly, provides greater certainty in decision-making, and treats each producer equitably in relation to others. The public has an interest in ensuring full and equitable valuations, the integrity of system, and access to sufficient information to be confident of that those and other worthwhile goals are being achieved. That is yet another lesson from property tax administration. Transparency sustains the success of high quality property tax appraisal systems wherever they may exist. Interior should have the confidence that public discussions in an open process can provide it with the support and confidence needed to operate successfully a direct valuation system.