

The Great Giveaway:

An analysis of the costly failure of federal coal leasing in the Powder River Basin.

By Tom Sanzillo

Author's Note and Data Limitations:

This report examines the coal-leasing fair market value appraisal program of the United States Department of Interior Bureau of Land Management (BLM). The BLM's practice of withholding information related to its fair market appraisal process has hindered the preparation of this report. In its policy handbook, the BLM states that such information is available to the public and the agency is committed to external review of its appraisal process. However, this study provides evidence that the opposite is true. Contrary to its stated protocols, the agency actively denies public information requests. Furthermore, there has been no robust programmatic or public external review of the coal-leasing program for almost 30 years.

Despite this limitation, the author believes that commentary on this topic is possible based upon the information that is currently available on the public record. The author is aware of the risks to sound methodology, measurement of coal price and reserve valuations that come because BLM has not made the data publicly available. ***In this instance, the data exist but are being withheld.*** The methods and conclusions contained in this report, particularly the quantitative calculations of revenue losses, would be significantly improved with access to the actual fair market appraisals and supporting documentation.

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EXECUTIVE SUMMARY

Rapidly changing market forces are driving a profound transformation of the Powder River Basin (PRB), which contains the United States' largest remaining coal reserve. Historically less significant than the country's other coal producing regions, the PRB has increased in national—and even global—significance in the last 40 years. Located in southeastern Montana and northeastern Wyoming, the PRB currently produces 44 percent of the nation's coal. The Department of Interior (DOI), through its agency the Bureau of Land Management (BLM), is responsible for the sale of PRB coal. Given that the United States owns almost all the coal in the region, the U.S. government holds an effective monopoly of western coal. As a result, government policies—or more precisely those of the DOI—are extremely influential and shape annual coal production levels and the market price of coal.

The BLM has a legal obligation to the American public to secure a fair market value for coal on public land. Historically the agency has sold PRB coal for below fair market value, and it continues to fail the public to this day. As a result of policy choices and an inherently subjective and flawed fair market value appraisal process—the problems of which are exacerbated by the agency's failure to consider changing market dynamics—the U.S. Treasury has lost approximately \$28.9 billion in revenue throughout the past 30 years. Despite past political scandals and promises of programmatic reform, neither the DOI nor the BLM coal-leasing activities have been audited or the subject of any major publicly available, external review regarding the sale of PRB coal for almost 30 years. As applied by the federal government in the case of federal coal leasing, the term “fair market value” rings hollow.

The 1982 Powder River Basin Lease Sales

In a tightly controlled and mostly secret process, the BLM leases coal tracts to private coal producers. After the BLM and the coal industry select parcels to mine, the agency establishes a fair market price for the coal tract that is held strictly confidential. The parcels are offered at a competitive auction, and the highest bidder that exceeds the confidential price is then awarded the mining lease. Most coal tracts sell for hundreds of millions of dollars and typically generate at least 20 years of revenue for federal and state governments, which split the revenue 50/50. If the BLM fails to set the price at fair market value—or, in other words, if it sets the price too low—both federal and state governments lose revenue.

The government has historically lost revenue as a result of the flawed fair market value process. The issue of lost revenue in the federal coal-leasing program was most clearly brought into the public consciousness in the mid-1980s. Following a period of intense program review and redesign, the agency lifted a 10-year federal moratorium on coal sales and placed 1.6 billion tons of PRB coal for sale in 1982. Surrounded by criticisms of leaked information, botched policies, and abrupt program changes, the sale quickly devolved into scandal. A congressional committee, the General Accounting Office (GAO), and the congressionally chartered Linowes Commission reviewed the sales and determined that the agency had effectively ignored its own appraisals and sold the coal at below fair market value.

According to GAO, DOI's internal checks, which were designed to ensure the receipt of fair market value, all failed. The one external check on the system, the failsafe on which the program relied—competition among coal producers—also failed. As the studies showed, there were a severely limited number of bidders on each of the 11 tracts offered for sale in 1982. In the end, the federal government lost \$100 million in revenue. The agency originally denied that it sold coal tracts below fair market value. Over time, however, DOI has taken credit for this action, claiming it wanted to provide domestic utilities with low-priced coal.

Lack of Oversight

Although the DOI implemented reforms in the wake of the scandal—particularly those designed to increase external review and enhance the transparency of the bidding process—neither Congress nor any independent entity has conducted an evaluation of the program in nearly 30 years. This lack of reporting is in sharp contrast to the years prior to the scandal when the GAO and other public interest research created a healthy body of literature for decision makers and the public. Moreover, there has been no follow-up to any of the audits or studies conducted after the controversial 1982 sales. The last on-point review that covered the major issues related to fair market value was a 1983 GAO audit.

Making matters worse, the DOI disbanded a resource available to help the BLM manage this process. In 1990, the agency decertified the PRB as a coal-production region. The designation would have required BLM to plan and monitor coal production in the region according to a systematic, rational management process. The DOI justified its decision to decertify the region by claiming there was no interest in coal mining in the PRB at the time. Immediately after announcing the decertification, however, the BLM was flooded with applications for new coal leases. Although the BLM continues to deny that the PRB is a coal-production region, the country's largest remaining coal reserve produces 47 percent of the coal used to generate electricity.

Recently, Congressman Edward Markey, the ranking Democrat of the House Committee on Natural Resources, requested a GAO review of the federal coal-leasing program. Concerned about the rising levels of exports, the flawed fair market valuation process, and the fact that the program hasn't been evaluated in 30 years, Markey made the request in order to provide Congress with the most up-to-date and relevant information and analysis on the topic. The BLM, which has built a wall of resistance to oversight, was hostile to the request.

Loss of Revenue

Because BLM sold U.S. coal for below fair market value, the U.S. Treasury lost \$100 million as a result of the 1982 lease sales.

As this report demonstrates, an analysis of all of the lease sales and royalty payments since that time shows that the U. S. Treasury lost out on an additional \$28.9 billion, adjusted to 2011 dollars. (To determine this figure, the author applied the adjustment used by the GAO in 1983 audit to calculate the actual fair market value for each lease sale since 1982. After determining the difference between the BLM's fair market value and the accurate value, the author then

calculated the sum of all bonus payments and royalties.) As this analysis demonstrates, reduced competition and an appraisal process skewed toward low coal prices result in this revenue loss.

The current lease program allows coal producers to set the terms for the mining, distribution, and pricing of coal. Theoretically, the bid process should stimulate competition among coal producers and this competition should then drive up prices to a market level. Competition is meant to both augment the valuation and serve as an independent check on BLM's coal appraisals. But without competition, the appraisal process is inherently flawed. Since 1991, the BLM has issued 26 coal leases; of these, only four have had more than one bidder. (And these leases had only two bidders each.) It is well known among industry officials that the BLM's common practice is to allow lease applicants to designate coal tracts to inhibit competition. Thus, competition between coal producers in the PRB is virtually nonexistent.

The U.S. Treasury also loses revenue because the fair market value appraisal process itself is largely skewed in favor of lower coal prices. More than simply selling coal inappropriately, the 1982 sales essentially flooded the market with low-cost coal, and that has had ramifications to this day for U.S. coal markets. The response by the stock market and coal analysts to recent lease awards reveals that the BLM is still selling coal below market value. The sale price of a lease awarded in 2011 to Cloud Peak Energy, a PRB coal producer, was so much lower than expected that the stock market—instantly recognizing the bargain—revalued the company and raised Cloud Peak's stock price that same day. When two additional auctions were held six weeks later, despite flaws in those processes, coal of lower quality than that in the Cloud Peak sale was sold for the highest price in the history of the program. BLM's recent acceptance of Peabody Energy's bid on the South Porcupine lease led one industry review of the proceeding to declare, "looks like a bargain" when compared with other recent sales.

Ignoring Larger Market Forces

The skewed appraisal process is revealed most clearly by the limited explanation given by the BLM in its Records of Decision (RODs), the agency's formal justification for a lease transaction. These justifications fail to address the fundamental market challenges facing the BLM and the nation regarding the current and future use, as well as the price, of coal. Today, market dynamics—such as the depletion of Central Appalachian coal reserves and low natural gas prices, which are edging out coal—are placing upward pressure on long-term PRB coal prices. In addition, the BLM fails to consider recent studies that call into question current coal reserves estimates. A recent report by the U.S. Geological Survey raises questions about the long-term accessibility of affordable coal in the PRB. However, the BLM does not recognize any of these significant market forces in its RODs.

Perhaps the most alarming aspect of the BLM's flawed appraisal process in the current market is its silence on the topic of coal exports. Although producers will continue to mine coal for U.S. domestic electricity generation, the most significant revenue generators (and the source of future share value) for these companies are export sales. Today every coal producer in the PRB region has announced expanded export scenarios. To improve their bottom line—particularly given the uncertainty of U.S. coal markets—coal producers are investing in port activity across

the United States to increase export potential and improve revenues and profits. One recent study places the export potential of U.S. coal producers at 500 million tons per year, half of the nation's typical annual production. As more U.S. coal is exported, it is likely that upward pressure on coal prices will also raise the price of electricity generated by coal. When it conducts its leasing activity, the BLM is neither accounting for these trends nor facilitating discussion regarding the implications of selling one of the nation's last remaining coal reserves to foreign markets.

Recommendations

The Powder River Basin is undergoing a rapid and profound transformation, one likely to come at a significant cost to both U.S. taxpayers and ratepayers. The concerns associated with the BLM's federal coal-leasing program—lack of oversight and accountability, loss of revenue, failure to consider changing market dynamics—warrant robust oversight. To address these issues, the author calls for the following immediate actions:

1. The Department of the Interior should implement an immediate moratorium on the sale of federal coal leases in the Powder River Basin.

The current lease program is purportedly designed to provide coal supplies for U.S. electricity generation at a fair market value. The DOI's real rationale for the sale of below market value PRB coal was to provide *cheap* coal for *cheap* electricity. Although the demand driver for expanded coal production was once domestic electricity generation, this is no longer the case. While the region will continue to provide coal to meet domestic energy needs (over the long term) as PRB coal becomes more expensive, the primary revenue driver for coal producers will be export sales. Today, the demand for new PRB lease applications and coal reserves is driven by coal producers responding to international supply and demand price signals in global markets, not to meet the need of the nation for electricity. This is modern-day coal-producer speculation—a practice that has been a concern of both Congress and presidents going back to Theodore Roosevelt. An immediate moratorium is necessary because the actions of these coal producers have clear implications for the U.S. economy and its environment, as well as for the electricity grid and political system. In the history of the coal lease program, policy makers have implemented moratoriums when far fewer challenges faced the program.

2. The Department of Interior should reinstate the PRB as a Coal Production Region.

The BLM's Records of Decision (ROD) reflect that the BLM is paying attention only to low-level microeconomic issues when selling coal. This fundamental failure reflects the inadequacy of an agency with neither a publicly accountable, regularized system of monitoring and analyzing coal markets nor the information necessary to grapple with the globalization of PRB coal. There are no publicly available documents or studies that reflect the multiplicity of issues that face the agency in this time of dramatic change. The claim, for example, in the RODs that use of coal for domestic electricity protects national security, when coal producers will actually export increasing amounts of coal to Asia, borders on the Kafkaesque. Redesignating the PRB and other areas as coal production regions will help the BLM address these broader economic issues.

3. Congress must conduct a fundamental review of the federal coal-leasing program, beginning with an evaluation of the use of U.S. coal assets.

Eighty percent of the coal in the PRB belongs to the U.S. government, granting the federal government an effective monopoly on western coal. The effective monopoly has ramifications for coal production throughout the country. Given that this resource is a public asset, coupled with the fact that there are significant economic, environmental, and foreign policy dimensions to this issue, a thorough review of the program is warranted. The failure of Congress to address the coal-leasing issue publicly, despite rising production and revenue growth, is a significant lapse that only now is being recognized. Critical to the debate are the following questions: What, for the foreseeable future, will be the primary use of PRB coal? Who will be its primary beneficiaries? What are the future prospects for coal use in America?

In addition to these primary recommendations, the author also suggests the following:

The General Accounting Office should conduct an audit, or series of audits, of the Bureau of Land Management's federal coal-leasing program. From the early 1970s through 1983 the GAO produced over 20 policy driven audits of the coal-lease program. The BLM's federal coal-leasing program has not been the subject of an independent review in nearly 30 years. Although the GAO reviewed the program in 1983, it has never conducted an audit of the program since issuing its original report (a 1994 audit of a specific lease problem provided some additional insights but was not an on-point audit of the full program). Recently, as a result of changing market conditions, Representative Edward Markey requested an audit of the program in order to provide Congress with up-to-date analysis and information. The BLM responded in a hostile manner. The fair market value lease program—which is shrouded in secrecy on the grounds of protecting the federal government and third party interests—warrants investigation.

The Department of Interior's Office of the Inspector General should conduct oversight activities regarding the Bureau of Land Management's interactions with coal producers. During the 1982 scandal, a federal investigation discovered that DOI staff leaked confidential pricing information to coal industry representatives. In the wake of the scandal, both the Linowes Commission and the GAO Office acknowledged the need for more oversight of the BLM's dealings with the industry to avoid potential conflicts of interest.

An independent entity should evaluate the Bureau of Land Management's coal-leasing program, with specific attention paid to fair market valuation. Throughout the past 30 years, there has been a lack of public oversight of the federal coal-leasing program. The lack of oversight, accountability, and transparency continues today. The BLM policy requires public inspection and external review to ensure program integrity, particularly those aspects of the process that are protected by the BLM's confidentiality claims. However, the external review process has not occurred. Given the scandal that ensued after the 1982 lease sales—and the promise of reform that never materialized—it is readily apparent that a new entity, independent of the current oversight bodies, must be created in order to provide adequate oversight. This organization, which could be patterned on the Independent Private Sector

Inspector General, could provide an external review of the program and ensure public inspection. The entity, which should remain in existence for at least 10 years, should regularly report to the president, Congress, and the public.

Conclusion

The BLM's process for valuing and selling federal coal in the Powder River Basin in essence created a de facto energy policy for the nation. The significant volume of coal that flooded the market after the 1982 sales, coupled with 30 years of anti-competitive program practices, drove the price of coal down for more than two decades, making coal artificially cheap. As this report shows, a continued failure to correct the BLM's flawed process and lax oversight exposes both federal and state governments to a significant loss of revenue.

In today's rapidly changing environment, the business consensus that produced the BLM's practice of selling coal below its fair market value is unraveling. Coal producers, now faced with a changing market, a host of potential regulatory conditions, and far more lucrative opportunities in the export arena, will be raising the price of PRB coal, and the nation's coal in general, to support their own needs. The long-term price outlook for PRB coal is upward and volatile. The long-term supply outlook for PRB coal is aggressive and global, not domestic.

The BLM is poorly prepared to handle these issues. The coal industry, which has a track record of limited transparency, has enjoyed a long history as a protected political class. Unfortunately, the BLM has adopted this same culture of insularity. Given future mining projections—12 billion tons by 2035—it is time for Congress to reevaluate the program. The last public discussion regarding the agency's mission and program was nearly 30 years ago. The stakes are much higher now.

PART I: INTRODUCTION

The Powder River Basin is the largest coal-producing region in the country and contains one of the most significant coal deposits in the world. The size of the nation's federal coal holdings—approximately one-third of the country's total reserves—has effectively granted the U.S. government monopoly control of the coal industry in the West. Today, those holdings have ramifications for the supply and price of coal throughout the United States. The debate regarding how the government should manage these coal resources—and particularly how they should be valued—has challenged numerous American presidents, policy makers, and public land managers since the 1800s. The Bureau of Land Management (BLM) of the Department of the Interior (DOI) is charged with managing these public lands for the benefit of future generations, while simultaneously ensuring that the nation's coal is sold at fair market value.

According to federal law, the BLM cannot accept less than fair market value for the sale of a federal coal lease.¹ Fair market value is defined as the amount of cash, or terms reasonably equivalent to cash, for which a willing knowledgeable seller can sell property to a knowledgeable purchaser who is willing, but not obligated, to buy. Prior to a sale, the BLM prepares an estimate of the fair market value of the coal lease in accordance with standard appraisal methods. This fair market appraisal, or the estimated value of the coal, essentially acts as the BLM's benchmark price—a guidepost against which bids are measured to ensure the agency complies with federal law. As agency officials, land managers, and elected officials have discovered, this appraisal process is complex, inherently flawed, and ultimately based on subjective judgments.

Congress and policy makers have struggled to design a robust program and accurately appraise these coal-rich, public lands at fair market value. Since the turn of the 20th century, three separate leasing moratoriums have been adopted. Given the significance of the fair market value assessment—and its role as a policy tool that enables the U.S. government to act as a price leader and set the price direction of PRB coal—these moratoriums provided policy makers with timely and important opportunities to evaluate the program. Despite substantial review and attempts at reform, the U.S. government has historically failed in its fiduciary responsibilities, more often than not selling its coal at below market value.

Since the controversial 1982 lease sale of 1.6 billion tons of PRB coal, and the adoption of reforms in the immediate wake of the scandal no government entity has conducted public oversight of the program. In fact, actions by the BLM—most notably the 1990 decision to decertify the PRB as a coal production region—have only exacerbated the problem. As a result of decertification, the agency quietly streamlined the lease sale process and turned over additional control to industry. Since 1982, production in the region has soared. A review of the record reveals that the U.S. Treasury has lost roughly \$28.9 billion in revenue. As a result of today's rapidly changing global coal markets—particularly the draw of lucrative export opportunities—coal producers expect to mine an additional 12 billion tons by 2035. Given the historical record, it's likely that the U.S. taxpayer will continue to lose.

About the Report

The federal coal-leasing program's historic, fundamental problems are exacerbated in today's marketplace. The inherently flawed fair market value appraisal process, coupled with decertification and the region's increasing rates of production, encouraged this analysis of BLM's program. The purpose of this study is threefold: (1) to use publicly available evidence to assess whether BLM has historically met the fair market value standard for the lease sale of federal coal; (2) to shine a light on the government's lack of oversight and accountability; and (3) to assess how the nation's coal supply, its markets, and the government are responding to the current challenge.

Organized in four parts, this analysis

- describes the historical context and examines the controversial PRB lease of 1982 as a case study (Part I);
- examines the policy of decertification, the BLM's current methodology of fair market valuation, and estimates the loss of revenue to the U.S. Treasury from the flawed process (Part II);
- examines the changing nature of coal markets and coal producers in the region to demonstrate that the BLM is failing to take important major market dynamics into consideration (Part III); and finally
- presents both immediate and more long-term policy changes to address the problem (Part IV).

Based solely on information that is available in the public record, this analysis is intended to spark a much needed and long-overdue conversation about the BLM's federal coal-leasing program.

Historical Background

A historical look at the federal coal-leasing program reveals a program fraught with controversy. Since the early 1900s, policy makers have struggled to design a robust and fair process to value and sell the nation's coal resources, while promoting environmental stewardship and protecting the social and economic concerns of local communities. These issues, coupled with concerns about speculation and the control of the industry by a few large interests, have dominated the debate since the program's inception. All these issues were brought most clearly into the public consciousness in the 1980s, with the controversial sale of 1.6 billion tons of Powder River Basin coal.

Since the 1970s, the DOI has addressed these concerns by imposing three separate moratoriums in order to adopt new reforms. Contrary to current industry opinion, these necessary and timely moratoriums provided both policy makers and agency officials with an

opportunity to review and reform the program. Given modern-day concerns related to the program, a review of the historical record is relevant for policy makers. Although the DOI continues to grapple with the same policy issues it faced 30 years ago, today's rapidly changing and increasingly complex markets make the task much more difficult.

Early Management

During the late 19th century, Congress passed a series of laws to address the management of federal coal resources. Reflecting the growing concern that federal lands with significant amounts of coal were much more valuable than lands without, the 1864 Pacific Railroad Act allowed lands with coal to be sold at a higher price. This law eventually gave way to the 1873 Coal Lands Act, which established a minimum price for lands with coal relative to their distance from a railroad, as most of the coal during this period was used by railroads to power steam locomotives. Often these laws proved problematic, as the lines between lands with coal and those without were not easily defined. As a result, these land laws were often ignored and the government typically did not receive the full value for lands with coal.²

The abuses of the Coal Lands Act eventually came to light under the Theodore Roosevelt administration. Concerns regarding the management of this public asset led Roosevelt to withdraw 66 million acres of federal coal lands from the program to prevent their sale to the private sector, enacting the first moratorium. The influence of the conservationist movement, whose principles Roosevelt championed, was readily apparent at this time. Roosevelt argued, "The nation should retain its full title to its fuel resources, and its right to supervise their development in the interest of the public as a whole."³ Although Roosevelt proposed a federal coal-leasing system during his administration, a stalemate ultimately ensued and the Coal Lands Act governed federal coal sales until 1920.

The 1920 Mineral Leasing Act

The enactment of the Mineral Leasing Act (MLA) in 1920 broke the policy stalemate and created a leasing system for federal coal, oil, and gas.⁴ The act prevented the government from mining coal outright and provided for the federal government to contract with private coal producers for the extraction and sale of coal from federal lands. In essence, the MLA gave the DOI the authority to control almost every aspect of the development of federal coal. Control of this process—along with the fact that the government owned almost all the coal in the PRB—effectively gave the federal government monopoly control of the emerging coal industry in the West.⁵ By 1920, the basic financial relationship between the government and coal producers was established.

Beginning in the 1960s, interest in western federal coal increased sharply until a significant amount of coal was under lease by the decade's end. Despite the large amount of acreage leased, very little coal was actually mined, as companies often held leases for speculative reasons.⁶ In addition to these concerns, the program's critics also charged that far too much coal was leased during this period for much lower prices than the government should have received.⁷ By 1971, DOI had become concerned about a variety of factors relating to the federal coal-leasing program, including the importance of federal coal in the West, the large amounts

under lease, and the fact that top DOI officials had paid little attention to the program during the period of rapid expansion in the 1960s. As concerns regarding the program's management reached a critical point, the DOI informally suspended coal leasing, implementing the nation's second leasing moratorium in May 1971.⁸ Two years later, then-Interior Secretary Rogers Morton announced that BLM⁹ would undertake the responsibility of developing a new federal coal-leasing program.¹⁰

New Federal Coal-Leasing Programs

During this period, a major social transformation was occurring across the country with the birth of the modern-day environmental movement and the emergence of a “no growth” movement concerned with increasing development pressures.¹¹ According to these critics, federal coal production threatened the West—which contained the country's few remaining pristine and sparsely populated areas. Against this backdrop, the coal industry projected a strong demand for western coal to meet the growing need for electricity and argued for large-scale coal mining.

The problems faced by the lease program were eventually outlined in a report to Congress in 1975.¹² The study documented a list of program and policy concerns, many of which remain relevant today. The most critical issues addressed included

- the definition, enforcement, and practical application of provisions related to coal producer speculation (i.e., gaining and holding lease rights without plans for or actual mining taking place);
- the domination of coal mining by a few large owners;
- the inability of the federal government to receive fair value from the coal lease sales (given that, at the time, competition was limited and royalty rates had not been adjusted to keep pace with economic changes.);
- the failure of the DOI to take its role of environmental protection seriously;
- the inadequate attention paid to social and economic impacts of new mining activity on host states and local communities; and
- the lack of an independent source of information, regarding aspects of coal production, for Congress (an especially urgent issue, given plans for intensified mining in the Powder River Basin.)

To address these issues, Congress passed the Federal Coal Leasing Amendments Act (FCLAA) in 1976. FCLAA required a fair return to the public for federal coal resources and imposed diligent development requirements—meaning that the development or production of a coal tract must occur within a certain period after the lease sale. This requirement was created to address concerns driven by the history of coal producer speculation and market manipulation. Specifically, the legislation established a 12.5 percent royalty payment rate;¹³ increased a state's share of bonus, royalty and rent revenues from 37.5 to 50 percent; and directed the government to ensure the maximum economic recovery of its leased coal.¹⁴ The act also

required diligent development within 10 years and emphasized competitive bidding and a fair market value process.¹⁵

That same year, Congress also enacted the Federal Land Policy and Management Act (FLPMA), which specifically assigned BLM oversight in the management of federal coal resources. The act also required that BLM provide an opportunity for public participation and conduct adequate land use planning, and also reinforced the Bureau's obligations under the National Environmental Policy Act (NEPA) of 1969.¹⁶ In 1979, DOI made further changes to the leasing program and created the Federal Coal Management Program (FCMP), which introduced the concept of 12 federal coal production regions and established two types of advisory boards, the Federal-State Advisory Board and the Regional Coal Teams (RCT). The new management program was first implemented in the Powder River Basin with the regional lease sale held in 1982.

The 1982 Powder River Basin Lease Sale

As Congress, public land managers, and policy experts debated the leasing program's controversial details, the 1971 moratorium remained in effect. Although it was intended to last only a few years, the moratorium lasted for more than a decade, before it was lifted in January 1981 as one of the last official acts of the Carter administration.¹⁷ In April 1982, the DOI offered several tracts totaling 1.6 billion tons of coal— one-twelfth of the country's total reserves at the time—for sale in Montana and Wyoming.¹⁸ Surrounded by criticism of leaked information and botched policies, the decision to lease the tracts under new program rules proved controversial, and the handling of the lease transaction devolved into a scandal.¹⁹

In the months prior to the sale, the Minerals Management Service (MMS), an agency within the DOI responsible for determining the value of the tracts, had conducted a fair market appraisal of the leases and had sent these values to BLM offices in Montana and Wyoming for review.²⁰ However, several significant problems emerged. At some point before the April sale, DOI staff had leaked pricing information from the appraisals to coal industry representatives. Although the DOI was made aware of the leak, it did not issue a report.

At a meeting in Washington a few weeks later, agency officials made an abrupt and seemingly arbitrary policy decision to change the bid process. The agency reduced the amount it was willing to accept at auction for a coal tract to a level below the fair market value established in the internal appraisal.²¹ Concerned that the appraisal prices were too high and that the leases might be priced out of the market, agency officials reduced the value of the tracts by roughly 50 percent.²² By reducing the bid prices, the DOI guaranteed the agency would receive less revenue as a result of the sale.

During the sale, which proceeded despite these issues, bids came in at or slightly above the reduced levels. The DOI then awarded these leases based on the new values, and PRB coal was mined based on these terms and conditions. In essence, the BLM rewrote the rules of the new program and effectively ignored the appraisals, thus setting a pattern for future coal pricing. The reduced bid had the effect of setting what the coal producers perceived as the market price

that the government would accept for the coal at a level far below that of the fair market value in the agency appraisal.

Implications and Investigations

The decision to proceed with the sale of the new coal tracts quickly proved controversial. Concerns arose that the leases were sold for less than fair market value. The minimally acceptable bid price effectively granted a “gift” to the coal producers and a loss of revenue for the U. S. Treasury. Rumors circulated regarding the leak by the DOI officials of critical price information to coal industry representatives and regarding the DOI’s decision to lower the bid prices. Expert opinion, which was already conflicted on the need for the sale, only intensified after the integrity of the process was called into question. These issues—which were exacerbated by the sheer size of the sale—sparked a series of investigative reports.

Following the controversial 1982 sale, members of Congress called for an investigation into the leasing program. In April 1983, the House Appropriations Committee concluded that the DOI sold federal PRB leases for \$60 million less than fair market value.²³ In May 1983, the U.S. General Accounting Office (GAO)²⁴ concluded that the leases were sold for \$100 million less than fair market value. And ultimately, a congressional commission, which was led by David Linowes and charged with taking a broader look at leasing policy,²⁵ concurred with earlier reports and suggested significant reforms and presented policy recommendations to correct the abuses.²⁶ (Later that year, Congress imposed its third moratorium, pending the completion of the work of the Linowes Commission.²⁷) The Office of the Inspector General also conducted an investigation into the ethical lapses of agency personnel. The GAO and the Linowes Commission reports, which stand out as authoritative studies, remain relevant today.

General Accounting Office Analysis

At the request of Representative Edward Markey and Senator Max Baucus, the GAO evaluated the controversial issues surrounding the 1982 sales of the PRB coal leases. Specifically, the GAO was asked to (1) examine allegations of unauthorized disclosure of data by DOI employees; (2) examine why the DOI abruptly changed policies regarding the bidding system; and (3) determine whether the public received fair market value for its coal.²⁸

The GAO determined that the DOI’s actions were inappropriate.²⁹ The audit also found significant flaws in the fair market value appraisals and concluded that, according to the GAO’s revised estimates of the fair market value of the 1982 leases, the coal tracts that the BLM sold for \$67 million should have sold for \$167 million.³⁰ The GAO also noted that many of the coal tracts only had one bidder, meaning there was a lack of competition among companies. More competition could have driven up the price of the coal and offset the distortions created by the BLM’s artificially low coal prices, which would have generated more revenue for the government. Because the BLM sold U.S. coal for 249 percent below fair market value, the U.S. Treasury lost \$100 million on the transaction.

Given the concerns regarding the DOI’s valuation of tracts, as well as the policies and procedures regarding bidding, the GAO found that the Secretary of the Interior “may wish to reconsider Departmental determinations and cancel leases for which fair market value was not

received.”³¹ In its final report to Congress, the GAO recommended that the Secretary of the Interior postpone regional coal sales until the DOI strengthened its procedures for determining the fair market value of federal coal.³² Ultimately, the DOI disagreed and proceeded with the sale.

The 1983 GAO audit represents the most recent, independent review of the fundamental issues of the BLM’s coal-leasing program – the management of the fair market value process and the revenue received from coal lease sales. Recognized as a seminal study, the review is known for its in-depth treatment of several topics that are relevant today, including the

- scope and definition of fair market value;
- responsibility of the Interior Secretary;
- inherent flaws in the appraisal process;
- incentive for the coal industry’s gaming of the system by limiting competition through the design of coal tracts;
- questionable interaction of coal industry representatives and DOI and BLM officials;
- extent to which small changes in appraisal formulas have large ramifications for coal bidding and coal markets;
- significant discrepancies between BLM appraisals and actual benchmark prices used to award leases.
- significant discrepancies between BLM price benchmarks and GAO’s independent assessment of BLM’s fair market value of the coal.³³

The Linowes Commission

The Linowes Commission on Fair Market Value Policy for Federal Coal Leasing (Linowes Commission) was chartered to study the leasing program and issue recommendations regarding the question *How can the federal government lease its coal lands to realize fair market value, while also achieving numerous other goals that are often in apparent conflict?*³⁴ Its mandate was to look at the leasing program more broadly. In formulating the report, the Linowes Commission built on the investigative work of the GAO and gave consideration to testimony, statements, and comments of diverse organizations and individuals.³⁵ The commission issued a report in February 1984 that contained 36 recommendations for reform, covering topics such as federal coal-leasing levels, appraisal methods, and the DOI’s general organization and management. This report focuses on the commission’s review of the 1982 lease sale and its review of appraisal methods.

Assisted by the investigative work conducted previously by oversight entities, the Linowes Commission concluded that the lower bid prices published by the DOI for the 1982 bids acted as the effective “market price” for the coal.³⁶ In February 1984, the commission transmitted its findings and recommendations to Congress. Recognizing that uncertainty is inherent in the appraisal process, it recommended that the DOI develop methods and procedures that are “unassailable not only in fact but also in public perception.” Emphasizing that a lack of formal guidance precluded an external review of appraisal procedures, the commission also suggested that the agency develop guidelines to promote uniform field office appraisals.

The Linowes Commission also viewed competition at the time of the sale as a fail-safe check against flaws in the appraisal process.³⁷ Presumably, parties to a competitive sale for a coal tract would arrive at a judgment of market value through their opposing bids, independent of the appraisal process. If the appraisal produces a bid price that is too low, robust competition among coal producers should result in a higher price, thereby protecting the federal government’s interest. (This was an assumption of the program at its inception and remains so today.)³⁸ The inability to establish regular, active competition leaves the BLM reliant on the accuracy of the appraisal as a proxy measure for market activity.³⁹

The problems created by the DOI’s flawed internal process for the 1982 coal tract sales, including the bid manipulation, could have been mitigated by robust competition. However, the sale of each coal tract drew only limited interest from producers. The lack of competition among coal producers eliminated the last and only independent, external check on the internal BLM fair market value process. The Linowes Commission and GAO reviews effectively showed the internal checks and balances meant to ensure a fair market value appraisal—committee review, agency counsel review, senior management participation, and postappraisal review—all failed in this case.

Office of the Inspector General

The Inspector General (IG) is responsible for independently and objectively identifying risks and vulnerabilities that directly impact the DOI’s ability to accomplish its mission. During the coal-leasing scandals of the 1980s, the Office of the Inspector General was asked to investigate the DOI’s decision to reduce coal price values by 50 percent for the purposes of the bid price. After a thorough review, the IG discovered that agency personnel (1) leaked portions of the fair market appraisal data to industry officials prior to the bid solicitation; (2) accepted gifts from those same industry officials; (3) were in a position to influence the outcome of the fair market appraisal and final bid selection; and (4) used their authority to reduce the minimum acceptable bid offered by the agency. Although the IG forwarded his findings to the Department of Justice (DOJ), no action was taken as the DOJ remanded the matter back to the DOI for potential ethics actions.⁴⁰

BLM’s Response

The findings of the GAO report, the Linowes Commission, and the Office of the Inspector General all point to serious problems regarding a lack of oversight, accountability, and transparency within the agency. As PRB production rates soared, increasing amounts of federal and state

revenue were at stake. In response to these reviews, the DOI defended its actions, denying it had acted improperly by leasing coal at below fair market value.⁴¹ In fact, the agency stated that the GAO's technical adjustments were incorrect. The BLM asserted that the GAO did not correctly interpret the drop in coal markets between 1980 and 1982. The BLM also stated that had it asked for higher amounts, no producers would have bid on the leases. In the end, the agency rejected the GAO's recommendations to cancel the bids.

In an interesting side note, when the agency was audited in 1994 (on an unrelated issue), it mentioned the 1982 sales, but this time citing national policy concerns to justify its 1982 actions. The BLM asserted it was trying to keep the price of PRB coal low in order to provide low cost electricity to consumers.⁴² It went so far as to cite the subsequent decline in coal prices after 1982, claiming that an increase in the supply of low-cost PRB coal ultimately had a positive impact on the country.⁴³

Changes to the Program

The Linowes Commission and the GAO reports resulted in some changes to the program in 1985, but the program's basic structure largely remains the same. The basic structure for the federal coal program established under FCLAA was set out in regulations promulgated in 1979 and 1982. Under these rules, coal leasing is supposed to be carried out in three phases: (1) land use planning; (2) regional sale activity planning; and (3) lease sale activities.⁴⁴ The post-1982 reforms promoted orderly and predictable leasing for state and local governments, as well as industry. It also attempted to promote competition, assure fair market value, and require due diligence for coal valuations.⁴⁵

Land Use Planning

Land use planning is intended to ensure that coal leasing passes through four screening phases. The first screen requires the agency to determine the development potential of the area. This analysis includes estimates of the quality and amount of economically recoverable coal reserves. Next, the agency considers whether lands may be unsuitable for mining. Lands deemed unsuitable are dropped from consideration for leasing. Multiple use tradeoffs are then assessed to determine whether other important uses may be incompatible with mining. Potential conflicts may lead to further removing areas from consideration for leasing. Finally, the agency consults with surface owners to obtain the necessary consent for mining, as required by the Surface Mining Control and Reclamation Act.

Regional Sale Activity Planning

Once planning is completed and a final land use plan (Resource Management Plan) is adopted, regional coal lease activity planning begins. The process is guided by the Regional Coal Team (RCT), a federal-state advisory group chartered under the provisions of the Federal Advisory Committee Act. The RCT reviews the land use plan and a long-range market analysis in an attempt to determine whether to proceed with leasing. If the RCT decides to move forward with leasing, a panel of science advisors and an internal BLM review council are appointed to assist the RCT in tract delineation, site-specific analysis, and environmental impact statement (EIS) preparation. A call for expressions of interest in leasing is also published in the Federal

Register. Responses may be used by the RCT in delineating potential coal tracts. The RCT then recommends a regional leasing level to the Secretary of the Interior and identifies, ranks, analyzes, and selects tracts for study in the regional coal lease sale EIS. A regional lease sale decision is then published in the Federal Register.

Lease Sale Activity

Finally, the lease sale is scheduled. Public comment is solicited on fair market value and appropriate mining methods to achieve the maximum economic recovery of the coal resource. A regional evaluation team then prepares its own estimate of the value of each lease tract. Following a three-day period of public notice, the lease sale is offered by means of sealed bids. A post-sale analysis of the bids is then made, recommending acceptance of the highest bid for each tract. Only high bids that meet or exceed fair market value may be accepted.

Exceptions for Leases Outside Production Regions

There are no exceptions to the phase-one land use planning, and phase three lease sale activity requirements. Regional sale activity planning (phase two), however need not be carried out in two situations. First, emergency leasing is allowed within designated federal coal production regions. Such leases are issued following an application and are used when coal is needed to maintain production levels in the near term. Second, regional sale activity planning is not required for leases “outside production regions.” The authority of BLM to lease tracts outside coal zones was established in 1982. The “lease by application” process, now almost exclusively the method used by BLM, was originally intended to be an exception to normal practice.⁴⁶ The term “coal production region” is not defined, but the federal government informally took the view that an area is not a coal production region unless substantial interest in new leasing exists.⁴⁷ Nonetheless, the Powder River RCT has decided that the Powder River Basin, one of the largest coal production regions in the world, is not a coal production region. There are currently no designated coal production regions in the country.

What this means as a practical matter is that rather than having the BLM take the initiative on coal leasing by first deciding whether there is sufficient demand for coal, and then designing tracts to maximize competition, the BLM defers to industry, allowing it to decide whether it wants more coal. Not surprisingly, the industry has designed tracts in ways that allow individual applicants to avoid competition and to demand leasing based on considerations of company share value and strategic positioning in the market. The process that emerged from the program’s history, scandal, and various investigations also created the modern-day operational protocols for the fair market value part of the lease process.

Disclosure and Oversight Issues

The Linowes Commission and the GAO made recommendations regarding how the BLM and the DOI should address ongoing disclosure and oversight issues. The program’s stance on balancing conflicts between the U.S. government’s legitimate confidentiality concerns and routine program oversight is expressed in the BLM’s operating handbook. In essence, the program protected government and industry confidentiality during the bid process but committed to a system of post-sale external review. The post-sale external review presumably completes the

process as it ensures (1) the soundness of the fair market value appraisal; and (2) that BLM officials follow policies and protocols before, during, and after the sale to ensure fair market value is received. The handbook, an element of the program reforms, was written in the wake of the 1982 scandal.

In the end, the most lasting impact of the 1982 lease scandal, and its subsequent Linowes Commission, action by Congress, and debate, was not a commitment to fair market standards. Those standards of fair return were always part of the government's program and simply reaffirmed. Rather, it was the recommendation to create the agency's handbook, titled *Economic Valuations of Coal Properties*. This document provides instruction to agency officials on how to conduct fair market valuations. It also provides objective guidelines that external reviewers can use to ensure that program reforms have been carried out, and to demonstrate that the BLM is responding regularly to the inherent challenges of the valuation process. While the assessment of the Linowes Commission is still mentioned by the agency, the handbook purportedly governs the coal-lease programs' operational determinations regarding individual coal tracts.⁴⁸

PART II: A HISTORY OF LAX OVERSIGHT: 1983 TO THE PRESENT

Given the documented concerns about the federal coal-leasing program, it's logical to assume that the BLM would work diligently to increase the program's transparency and the robustness of its evaluation and appraisal processes. However, the lack of any meaningful oversight of the program in the past 30 years clearly demonstrates that there is no publicly available, independent evidence that the BLM leases coal according to fair market value standards. There is also no evidence that the BLM complies with its own standards. This section examines several critical areas of program monitoring and oversight.

Decertification of Coal Production Regions in 1990

In 1979, the DOI created the Federal Coal Management Program (FCMP), which first introduced the concept of the 12 federal coal production regions, or regions of the country where mining occurs. The program also established two types of advisory committees, including the Federal-State Advisory Board and the Regional Coal Teams (RCTs). The program required BLM staff to engage in a deliberate and coordinated series of actions designed to identify coal tracts and set production levels. (See the discussion in the “*Changes to Program*” section.) The BLM was also required to consider stakeholder input, drawing from a broad cross-section of data, prior to placing a tract up for bid.⁴⁹ For the most part, these regulations were never implemented⁵⁰, and by 1990, BLM's regional coal teams had successfully lobbied to disband or decertify all 12 coal production regions.

The process of decertification essentially stopped regional lease sales, but it allowed the lease by application (LBA) process to continue. The LBA process, which is invoked by an application *outside a coal-production region*, requires an applicant to submit a proposal for review by the RCTs. If the proposal is approved, the BLM then begins an environmental impact assessment for the tract.⁵¹ By eliminating the PRB's status as a coal production region, decertification ultimately streamlined the leasing process, reduced competition, and allowed the applicant (typically a private coal company) to design lease boundaries.⁵² In short, the decertification of the Powder River Basin gave coal companies nearly complete control of coal mining in the region.

Although the BLM claimed that the regions were decertified because there was limited interest in mining at the time, in fact the opposite was true. As the GAO noted in its 1994 audit of a specific complaint on a lease, “Within four months of the Powder River Basin region decertification, industry filed four applications for about 800 million tons of recoverable coal to maintain existing mines in the region.”⁵³ In the months and years following decertification, interest in coal leasing skyrocketed. In 1983, the PRB coal region produced 151 million tons of coal; by 1993, production had jumped to 275 million tons annually; and by 2010, the PRB region was producing 470 million tons of coal. Since 1990, the BLM reports that 21 tracts, totaling nearly 6 billion tons, have been offered for sale under the LBA process in Wyoming.⁵⁴

Understanding the significant impact of decertification and its adverse impact on public lands, local communities, and other environmental issues, several organizations have worked to reinstitute the designation. As a result of increasing leasing and mining activity since decertification, WildEarth Guardians petitioned the BLM to reinstate the PRB as a coal production region in 2009. After the BLM denied the petition, WildEarth Guardians, the Sierra Club, and Defenders of the Wildlife challenged the agency, arguing that both current and anticipated levels of coal production and leasing activity met the test of an active coal region. The organizations also asserted that the agency’s current leasing process, which was implemented as a direct result of decertification, “prevents the BLM from fully analyzing and addressing the environmental impacts—in particular, the global warming impacts—of coal leasing.”⁵⁵ The suit called for the recertification of the PRB and requested more-intensive environmental analysis regarding the issue of climate change. The BLM and the coal industry aggressively contested this suit, which a federal court in Wyoming recently dismissed without reaching the merits.

The BLM’s rejection of the coal production regions—despite the industry’s continuing applications for additional reserves—has several policy implications that remain relevant today. First, the BLM’s actions reaffirm its commitment to coal producers over and above its commitment to the sound management of a public resource. With only minimal supervision, producers are allowed to determine the need, scope, location, and pace of mining. The practical workings of the program contradict the intention of Congress to promote the sound management of these public lands. Second, the BLM has effectively rejected an ongoing monitoring and information resource that could improve both its fair market value appraisals and its stewardship of the coal resources under its jurisdiction. Third, BLM eliminated a potentially useful internal check of the fair market value process. The coal production region designation process discussed above would provide an important feedback loop within the agency for the FMV process and the information and market trend information that provide the inputs for the appraisals.

Given the historic tensions between the agency, the public, and the coal industry, decertification moves the BLM in the wrong direction and ultimately reduces the transparency of an agency whose actions are already suspect.

Current Oversight

The BLM’s federal coal-leasing program generates significant revenue for the U.S. Since 2000, total annual revenues from the coal-leasing program, including all bonus payments, rents and royalties, (see section below *Collecting Revenue*) increased from \$377 million to more than \$1 billion.⁵⁶ Although the financial and economic importance of the program warrants robust oversight, very little evaluation has occurred. In the last two decades, the decertification of the PRB has only exacerbated the problem. Intensifying the problem is BLM’s refusal to provide the public with documentation regarding how it determines fair market value for the purposes of awarding leases. Despite these critical factors—revenue generation, PRB production increases, and the lack of information—the GAO, the Office of the Inspector General, and even

Congress—which has not commissioned any studies of the coal lease program since the mid-1980s—have failed in its oversight obligations.

Office of the Inspector General

Although the IG has performed a number of important audits regarding the management of abandoned mines⁵⁷ and land boundaries,⁵⁸ the office has not published any significant reviews of the coal-leasing program or related functions of coal leasing since at least 2000.

Congress

Congress has not issued a policy study related to the fair market value aspect of the coal lease program since the 1980s. As part of its annual budget justification to Congress, the BLM provides reports regarding certain performance indicators related to the coal-leasing program. These reports, which have been reduced to annual budget justifications, contain misleading and incomplete information regarding coal markets and program operations. For example, the budget justifications inform Congress that program activity (coal leasing) will be limited in the upcoming years due to a weak market. Yet during the same fiscal year when activity was supposed to be limited, the Secretary of the Interior announced a major expansion including 2.4 billion tons of new reserves under lease by coal producers involving over 20,000 acres.⁵⁹ In short, these justifications are perfunctory at best.

Government Accountability Office

Between 1972 and 1994, the GAO issued 22 reports, audits, and testimonies on several aspects of the DOI's coal-leasing program (see *Appendix C*).⁶⁰ Those reports covered fair market value appraisals and needs assessments for leasing and implementation. The GAO also examined royalty assessment and collection policies, coal pricing, the decertification of regions and several other issues of interest to Congress and the public. In 1979, the GAO conducted a thorough analysis of the program and provided decision-makers with a forward-looking view of the program. After it published its seminal audit in the wake of the 1982 scandal, the GAO neither conducted a follow-up audit nor reviewed the new standards outlined in the BLM handbook.⁶¹ Failing in its obligation to provide the public and decision-makers with timely information, the GAO has been silent regarding the efficacy of the federal coal-leasing program since 1994.

A review of its current documents, including its five-year strategic plan, makes evident that the GAO does not plan to return to the issue, and its silence is likely to continue. This is particularly striking for the following reasons.:

1. The BLM recognizes the importance of external review.

In its handbook, the BLM recognizes that external review, which is normally conducted by an independent third party, is an integral part of the fair market value appraisal process. The process is based on subjective judgments and takes into account inherently challenging market changes.⁶² The external review is a necessary post-audit check on a secret bidding process (as determined by Congress and the agency) that is supported by the appraisal process. More than a mere technicality, the review is essential and affirms the integrity of each and every lease

transaction and the integrity of the organizational culture in which the processes were implemented. The last evaluation of the BLM indicated flawed appraisal assumptions, conflicted staff, and questionable manipulation of the pre- and post-bid process. In the absence of any meaningful review in the last 30 years, the DOI is subject to the critique that it has never completed a lease transaction according to its own protocols.

2. The Powder River Basin has increased in national importance as a fuel source for the U.S. electrical grid since 1982.

The region currently provides 47 percent of the coal used for electricity in the United States. (For additional detail on these significant market changes related to coal, see Part III. These geological, economic, regional, and global factors are potential game-changers for the PRB.) In the past—when the PRB played almost no role in electricity generation for the nation—any *one* of these factors would have prompted an outpouring of congressional and think tank resources and public discourse. Yet today, given the national importance of the PRB, coupled with the fact that *all* of these forces are affecting market dynamics, it is worrisome that these changes have not prompted a national discussion. Although the GAO explicitly states that it is concerned with commodity price volatility in energy markets, general problems related to economic efficiency, and auditing more traditional areas of waste, fraud, and abuse, this is not evident in the case of the coal lease program.⁶³

3. The PRB is a coal production region.

Despite the BLM’s consistent legal position that the PRB is not a coal production region, as defined in law and regulation, the agency continues to lease ever-increasing amounts of coal reserves primarily using the inappropriate lease by application (LBA) process. The BLM’s agreement with western coal producers to place new coal reserves under lease has increased from a steady stream in 1991 to a cascade in 2011. As the next section of this report demonstrates, the agency continues to lease coal below fair market value. Absent any independent review, the red-flag warnings—originally raised in 1982—are still valid.

Recently, Representative Edward Markey (D-Massachusetts), the ranking member of the House Natural Resources Committee, formally requested a GAO report examining federal coal-leasing practices.⁶⁴ Concerned with the expansion of coal exports, the need for an up-to-date review of fair market value appraisal processes, and the length of time that had elapsed since the last review, Markey asked the GAO to specifically address the implications of rising coal exports on declining domestic demand. The BLM’s response to Representative Markey’s request was negative. According to the *Platts Coal Trader*, the leading industry trade paper, the agency found the request “odd.”⁶⁵ It remains unclear whether the GAO will undertake this report.

Withholding Information

The reforms instituted after the 1982 scandal attempted to balance the legitimate confidentiality needs of the government with the public’s right to know how its assets are being managed. Changes to the program implemented throughout the 1980s stipulated that the agency would not publish bid prices but would keep the information confidential. Ultimately, this required that the agency and its staff—in private—arrive at market valuations fairly. At the

time, a process of post-transaction audit or review of these lease awards was deemed necessary to ensure constant accountability.

According to the BLM's handbook, one way of obtaining openness and post-transaction accountability is to publicly release the documents that the agency uses to set the fair market valuation. The BLM policy specifically states that after "bid acceptance and/or rejection decisions have been reached by the authorized officer, the fair market value appraisals and estimates can be released to the public upon request on those tracts where the high bid has been accepted."⁶⁶ As the author discovered, meaningful data are not made available to the public regarding the fair market leasing aspects of the BLM's coal-leasing program. Although the policy manual creates the perception that this information is publicly available, in practice the BLM denies requests for information.

In order to evaluate both past and current leasing activity, a number of environmental organizations—some which are active litigants on matters involving the agency—have made formal requests to the BLM requesting the specific pre- and post-sale appraisal reports identified above. In the last year, environmental organizations working in the region filed two separate Freedom of Information Act (FOIA) requests. The first FOIA, filed by the Powder River Basin Resource Council, requested information pertaining to recently granted (2011) West Antelope II North and South leases. The second FOIA, filed by WildEarth Guardians, requested information regarding 10 existing leases awarded under various program scenarios by the BLM since 1991.

The BLM responded. It did not release the core documents that explained how it arrived at its fair market value determination. According to the BLM, this non-disclosure: protects the trade secrets of third parties, who would be harmed if the information were released; protects agency staff, who should be afforded the comfort of expressing opinions during the deliberative process; and protects the government both from those who would litigate against it and from the release of information that would allow gaming of the system.⁶⁷ The failure of the BLM to release this information publicly to the groups requesting it ultimately demonstrates that the purpose of the handbook—and the ethic of disclosure it once embraced—is no longer the operational policy of BLM.

The 1982 scandal brought about pronounced reforms. However, once the spotlight of the scandal dimmed, the promised oversight—external review and public inspection—never occurred. The purpose of this study is not only to determine whether the fair market value standard is being met but also to assess how the nation's coal supply, markets, and government are responding to current challenges. The remaining sections of this report address the implications of selling federal coal below fair market values.

The Current Fair Market Valuation Process

According to federal law, the BLM cannot accept less than fair market value for the sale of a federal coal lease.⁶⁸ The BLM has interpreted and operationalized its statutory mandate to receive fair market value for coal mined under leases that it issues to private coal producers.⁶⁹

Prior to a lease sale, the BLM prepares an estimate of the fair market value of the coal lease. The estimate, which is prepared in accordance with standard appraisal methods, is strictly confidential.

"Fair market value" is defined as the amount of cash, or terms reasonably equivalent to cash, for which a willing, knowledgeable seller can sell property to a knowledgeable purchaser who is willing, but not obligated, to buy. Specifically, fair market value is determined by reference and exposure to a competitive market, to which the property must be exposed for a reasonable time. The market value is only that value transferable from owner to owner.⁷⁰ To determine the value, the BLM produces a formal valuation for a tract that has been identified by a coal producer in an application. The fair market appraisal, which is supposed to provide the agency with a reasonable estimate of the value of the coal, acts as the BLM's benchmark price. It is a guidepost against which bids are measured to document the agency's compliance with federal law.⁷¹ (For a more detailed look at how the BLM calculates fair market value, see the section that follows, "Determining Fair Market Value.")

As a practical matter, under the current lease by application procedures, coal producers initiate the leasing process by identifying minable coal tracts. BLM employees responding to an application then gather data, prepare valuation documents, and arrange dates for bidding. A coal producer is then able to offer a bid, via submitting an application, on a specific tract. Theoretically, the applicant competes with other coal producers who may have an interest in developing the same tract. The BLM then accepts the highest bid submitted at a competitive lease sale that meets or exceeds its estimate of fair market value.⁷² The data is then stored and used as documentation for future coal tract sales. This process is codified in BLM's handbook, entitled *Economic Valuations of Coal Properties*, which was created in the mid-1980s.

Determining Fair Market Value

Many of the components of the current program's design flow from the detailed analysis made by the Linowes Commission. Recognizing that appraisals are only as good as the quality of the data used in their preparation, and that judgments on valuations are subjective, the commission asserted that strict program guidelines must be implemented to ensure standards of integrity and to instill public confidence in the process. According to the BLM's handbook,⁷³ the FMV of a coal tract that has been proposed for development by a coal producer can be derived either by using a comparable sales approach or by employing an income approach.⁷⁴

Comparable Sales Approach

The comparable sales approach, which is the method that the BLM prefers, allows the value of recent sales to be accepted as the new market value for a similarly situated coal tract. This approach is grounded in realworld, market-based transactions. If a prior buyer and seller agree to a price on a similar property within a reasonably similar timeframe, the presumption is that the government's acceptance of that price is reasonable as a measure of fair market value. Although coal tracts may vary to some degree, they must retain sufficient degrees of similarity in order to permit the BLM to use the comparable sales approach.

The BLM's method allows for adjustments based on a variety of factors, including but not limited to location, stripping ratios, coal quality, and seam thickness. Regulatory rules and coal price changes, which are larger market drivers, may cause adjustments to comparable properties. A discount factor, which is calculated based upon the BLM personnel's judgments, is then applied to these adjustments. The result is a presentation of the price of coal on a discounted, per ton value basis.

The discounted per ton value is a snapshot of the future price of coal over the projected 20 year life of the mine expressed in today's dollars. The per-ton calculation is then multiplied by the total tonnage derived from the mining plan, and each property is assigned a comparable sales value. The comparable sales are then weighed and reconciled, and BLM decides upon a single value for the proposed site as the accepted FMV. The FMV derived under the comparable sale approach is expressed as both a per-ton value and a total value for the lease.

Income Approach

The income approach to determining FMV applies BLM's general methodology and creates a financial model for the specific tract under consideration. The agency has ultimately deemed this approach less desirable, as it requires more judgment and heightens the risk of speculation and bias in the actual appraisal outcome.⁷⁵ In this method, the estimated annual revenues are subtracted from the estimated annual expenses. A discount rate, which approximates rates of return, is factored in and adjustments are made for inflation, taxes, and uncertainty scenarios. The amount is divided by the total tonnage from the mine plan. The net amount, expressed on a per ton basis, represents the net amount available for the purposes of the lease. In effect, this amount can be viewed as a rent payment.

FMV Property # 1 = Original Sales Price/Per Ton +/- (NPV Adjustments)
FMV Property # 2 = Original Sales Price/Per Ton +/- (NPV Adjustments)
FMV Property # 3 = Original Sales Price/Per Ton +/- (NPV Adjustments)
FMV BLM Coal Tract = Weighted Adjusted Average (Comparable Sale # 1, 2,3)

Source: TR Rose Associates

FMV= (NPV estimated revenues-NPV estimated expenses)/total tonnage

Source: TR Rose Associates

Collecting Revenue

As the owner of the coal asset, the U.S. government collects a bonus or lease payment, a 12.5 percent royalty payment on revenues from actual tonnage, and a \$3 per acres rent payment.⁷⁶ The bonus and royalty sources of revenue are explained below.

Bonus Payment

Under the current program, the market value, which is derived from either the comparable sales or income based methods, is not disclosed to prospective bidders. After the BLM establishes a sale date, the applicants are then asked to submit a bid that they believe meets or exceeds BLM's fair market value estimate. The winning bidder must then make arrangements to pay for the lease. The lease payments are usually paid to the federal government in increments. The proceeds from this sale are split evenly between the federal government and the state in which the coal is mined.

The appraisal process outlined in the BLM handbook attempts to capture market changes, either by monitoring adjustments to comparable sales or through the dynamics of accurate data collection and forecasting in the income approach.⁷⁷ In theory, if markets are strong, revenue generated by the sale of the coal will significantly exceed mining costs. Therefore, a stronger market and higher coal price should be captured in a higher fair market value calculation and ultimately a higher bonus payment. If BLM's process is robust, the FMV should capture a rising price environment.

Similarly, conditions intrinsic to the tract that might increase or decrease the costs of production adjust its value in the FMV appraisal process. The combination and weighing of the factors ultimately sets the final valuation. The bonus payment is established as a function of the FMV. If the FMV appraisal sets it too low, the government foregoes revenue, effectively bolstering coal producer profitability.

Royalty Payments

The government collects a per ton royalty payment on the revenues generated by the sale of the amount of coal mined. This payment enables the government to capture additional revenue as production occurs and to share price risk as markets fluctuate. In short, coal producers are provided with an incentive to find higher prices. Coal companies must balance competing corporate financial objectives that often conflict: increasing operating margins and improving market share. As a result, these companies must make short- and long-term trade-offs. (For a more detailed discussion of the model, see *Appendix A*.)

Role of Price of Coal in Fair Market Valuations

To support the revenue assumptions expressed by the coal producer, the BLM handbook states that a market study of coal prices must accompany any appraisal. However, the handbook fails to provide staff with specific standards and practices regarding how the market assessment should be conducted. It also fails to include guidance regarding the type and quality of data used to form the basis of the coal price analysis.⁷⁸ The handbook does provide at least broad discretion regarding the type and quality of information that agency officials use to help inform

the judgments they make that are related to the values supplied in the discounted cash flow analysis. It also sets forth standards for staff who conduct fair market appraisals. Data and method must be given due consideration. In the end, the fair market value judgment is just that: a judgment.

The coal price assumptions used in any appraisal have a significant impact on the ultimate value assigned to the specific coal tract.⁷⁹ If the coal price used is too low, the U.S. government gives away the coal for below market value and the U.S. government loses revenue. There is a loss of revenue to the U.S. government like that identified by Congress, the GAO and the Linowes Commission in the 1982 coal tract transactions. Market distortions can also be introduced, like those acknowledged by the BLM in the 1994 GAO audit. If the coal price assumption is too high, coal producers must decide whether to bid on the coal tract or to wait.

Loss in Revenue

In the wake of the 1982 scandal, the government reformed its federal coal-leasing program. The lease program now relies on a system of confidential appraisals and public bidding to establish its purported compliance with the fair market standard. Although the appraisal process—which is governed by federal statute, regulation, and the internal BLM handbook—outlines vigorous standards, there is no publicly available evidence that the BLM has followed these standards. There is evidence that the coal is leased at levels below the fair market value. The net result? A loss of revenue in the range of \$27.6 to \$28.9 billion for the federal government and its partner states since 1983.

Technical Basis and Rationale for Calculation

The agency's rejection of Freedom of Information Act (FOIA) requests creates methodological challenges for a quantitative analysis of the loss in revenue from the BLM's practices. As a result, this report's statements and conclusions are based on the information available in the public record and augmented by information provided by such entities as the Energy Information Agency (EIA). The basic assumption used in this study is that BLM has and continues to repeat the same undervaluing of coal that was demonstrated by the GAO in its 1983 audit. There is simply no evidence to the contrary on the public record.

Why apply the adjustment used by the GAO in its 1983 audit? The GAO represents the only publicly available, relevant independent check on the FMV program in the last 30 years. The GAO found that the BLM awarded leases of 1.6 billion tons of coal for \$67 million in 1982 that were actually worth \$167 million. This amounts to a 249 percent discrepancy between the BLM's sale price of these leases and the fair market value derived by the GAO in its investigative analysis of these leases.⁸⁰ Following the 1983 audit, the BLM acknowledged that the subsequent decline in coal prices from 1983 to 1994 had a desirable impact on regional economies. In addition, the coal industry frequently points out how low cost coal from the PRB is dramatically more cost-effective than all other fuels. Coal from the PRB has a competitive economic advantage.

The Wyoming Mining Association (WMA) has published an estimate that the nation enjoys a total annual savings of \$285 billion from reliance on PRB coal versus the next lowest-cost

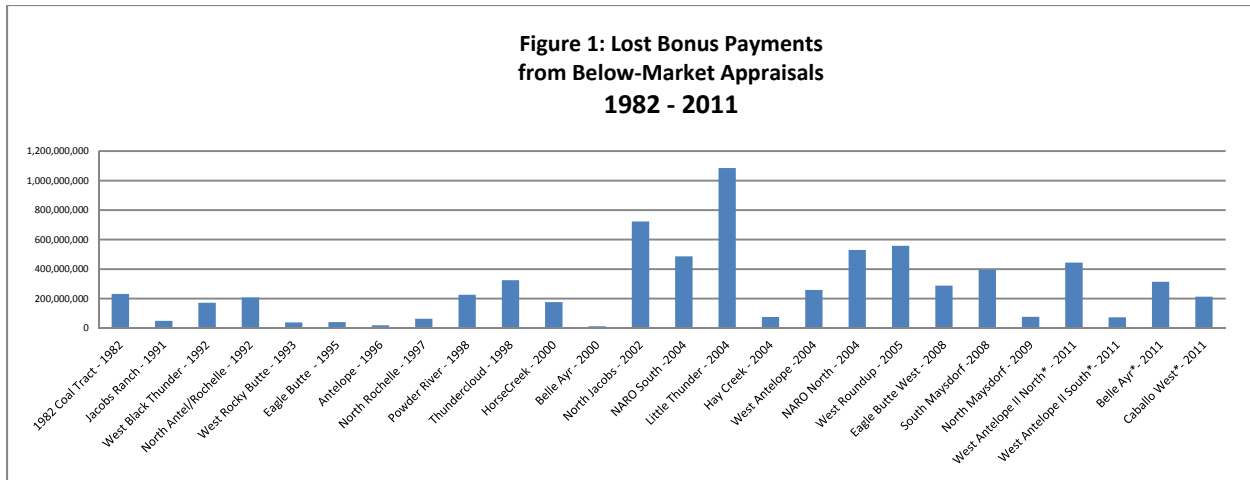
energy source, natural gas. As a method of estimating the overall value of PRB coal, the WMA calculation assumes electricity prices would rise by \$118 billion annually if natural gas were substituted for PRB coal. The WMA model uses the alternative market measure of power prices established by natural gas to gauge the current value of PRB coal.⁸¹ While the WMA conducted the study prior to the decline in natural gas prices, the significant competitive advantage of PRB coal with other fuel sources has been the critical reason why it has gained such a large percentage of market share in the last 30 years. Even in the current environment, when natural gas prices are low and every other coal-burning region in the country is stressed by competition from natural gas, PRB coal's low price keeps it relatively competitive.

PRB coal is also more competitive vis-à-vis other types of coal in the United States. Peabody Energy, the nation's largest coal producer, has projected the market headroom value of PRB coal at \$29 to \$36 per ton between 2011 and 2014.⁸² Unlike the WMA analysis and the comparison with natural gas, the Peabody presentation is comparing the "parity price" of PRB coal against alternative coals produced in other regions. Peabody's presentation to investors seeks to quantify "unlocked" value that the company sees in its PRB coal reserves. The company projects far greater value in the PRB mines than is currently recognized by traditional, corporate-asset-valuation models, or presumably the fair market value modeling used by the BLM. This positions the company to attract investors, if not buyers. The alternative fair market value for PRB coal arrived at by the model used in this paper for 2010 is \$33 per ton, very similar to that of Peabody. When one considers the undervaluing of the coal in 1982, the coal industry's view of substantial competitive advantages of PRB coal versus other fuels, Peabody Energy's pitch to investors that the coal has strong upside potential, the persistent lack of competition in bidding, and the recent mishandling of lease valuations in 2011, it is clear that PRB coal is undervalued by the BLM and has been for decades.

To calculate the loss in revenue to the government since 1982, the adjustment made by the GAO has been applied to all approved lease sales since that year. The calculations below represent the amount that DOI would have collected had it applied at least the same FMV methods applied by the GAO, adjusted to 2011 dollars. (For a more in-depth look at the assumptions behind the model, see Appendix A.)

Bonus Payment Loss

To estimate the approximate loss in bonus payment revenue, the author reviewed available data for BLM leases awarded between 1982 and 2011. The lease sales price was then adjusted upward based on the percentage difference (between actual payments received and adjusted fair market value from the 1982 sale) that the GAO established in its 1983 audit. The new fair market value was then subtracted from the actual cash payment made for each lease since 1982. The difference constitutes the amount of bonus payment lost by the BLM's failure to charge a fair market value. The loss in bonus payment revenue for each sale, which is illustrated by Figure 1, has been adjusted to 2011 dollars. Cumulatively, the loss of actual cash from bonus payments between 1982 and 2011 totals \$7.1 billion.

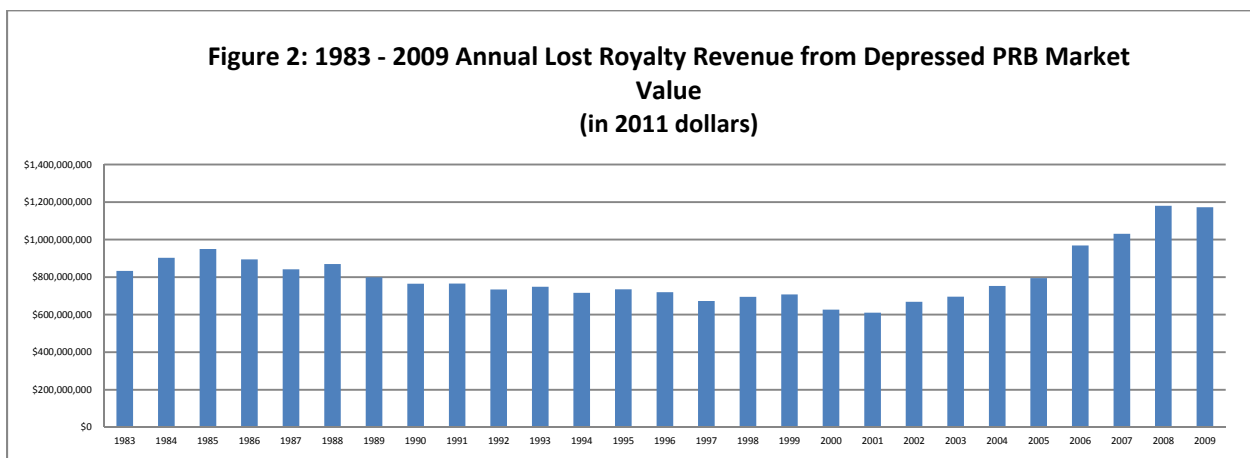


Source: TR Rose Associates

Royalty Value Losses

As with the calculation for the loss in bonus payment revenue, the same loss percentage that the GAO established in its 1983 audit is used to establish a new market price for subbituminous coal for every year since 1982.⁸³ This market value price, which serves as a market proxy, is multiplied by the total annual production of subbituminous coal to establish the fair market value for annual production. This value is then subtracted from the actual production and price values in the EIA database to find the difference between the actual value of the sale price and the total value of the coal had it been sold at a fair market price. This total dollar figure is then multiplied by 12.5 percent, the rate at which royalty payments are assessed according to the lease agreements between the BLM and coal producers.

As Figure 2 demonstrates, for the period between 1983 and 2009, the total foregone value in royalty payments alone, adjusted to 2011 dollars, is in the range of \$20.5 to \$21.8 billion.⁸⁴ This range represents an estimation of the foregone value in royalty payments since 1983, adjusted to 2011 dollars.

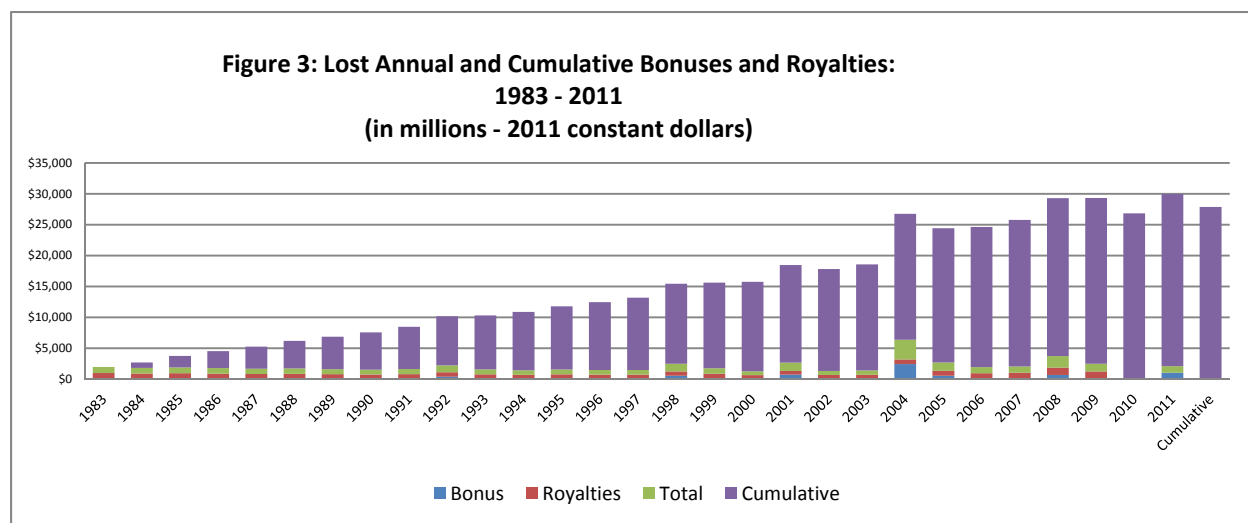


Source: TR Rose Associates

In summary, the author has found:

The loss of actual cash from bonus payments of \$7.1 billion represents the estimated amount the DOI would have collected had it applied at least the same FMV methods to all approved leases since 1983 that the GAO used that year in its original fair market value calculations. The GAO audit represents the only publicly available, relevant independent check on the FMV program in the past 30 years;

The estimated royalty losses equal an approximation of the revenue that would have been collected if coal producers had charged a “market price” for PRB coal since 1982. The range of values from \$20.5 billion to \$21.8 billion represents 12.5 percent (the royalty tax) of the difference between the aggregate of all revenues from all coal sales from 1983 through 2009 set at a “market price” minus the aggregate of all revenues from all sales for the same period that are actually reported in EIA’s database.



Source: TR Rose Associates

Taken together, the author estimates that federal and state governments lost between \$27.6 and \$28.9 billion⁸⁵ in cash and value from the below market valuations—and subsequent market imbalances—created by BLM’s administration of the fair market value portion of the coal lease program. The losses can be categorized into two areas: \$7.1 billion in lost bonus payments and between \$20.5 and \$21.8 billion in lost royalties, the cash equivalent of lost revenues from coal producers.

PART III: CHANGING MARKET DYNAMICS

Ignoring Larger Market Forces

Today, the BLM actively grants both new leases and extensions on existing leases on PRB coal tracts. Between now and 2035, the EIA projects, 12 billion tons of coal will be mined. In March 2011, Interior Secretary Ken Salazar announced a series of coal lease sales and Records of Decisions (RODs) on pending lease applications. When finalized, these transactions will lease 2.36 billion tons of coal reserves.

Against this increase in PRB leasing activity, a major transformation in coal markets is occurring. The four most significant demand pressures causing this shift are increasing international demand for the export of PRB coal; cost of production pressures; the loss of Central Appalachian reserves; and declining natural gas prices. These factors drive coal-producer investment strategy and current coal-market analyses.

As the following section illustrates, the BLM is failing to consider these critical larger market forces in its appraisal process, despite the acknowledgement of their importance by the four main coal producers in the region: Peabody Energy, Arch Coal, Alpha Natural Resources, and Cloud Peak Energy. (See Table A.) Although each company has a distinct corporate strategy and role in the industry, their holdings in the PRB follow very similar story lines. Each company has low to modest margins with heightened concerns for cost of production pressures; has projects in the works to derive revenue from PRB export sales; and has increased its coal reserves in the PRB in the last year. The previous section detailed the loss of revenue to date for coal leases. Looking forward, the U.S. Treasury stands to lose even more revenue if the BLM continues to ignore larger market forces.

Financial Metric	Peabody Energy	Arch Coal	Alpha Natural Resources	Cloud Peak Energy
Total Market Capitalization	9.07	2.65	3.87	1.08
2011 Annual Revenue	7.97	2.85	6.9	1.55
2011 EBITDA	2.13	1.04	1.26	.35
52-Week Price Range of Stock	\$29.78- \$73.95	\$11.25- \$36.99	\$15.49- \$61.66	\$15.91- \$24.34

Table A: Selected Financial Data of Powder River Basin Producers (all dollar values in billions except stock prices)⁸⁶

Source: TR Rose Associates

Peabody Energy, Arch Coal and Alpha Natural Resources are the three largest coal producers in the nation. Cloud Peak Energy is the only company that mines coal exclusively in the Powder River Basin (Cloud Peak is often referred to as a “pure play” because its production is exclusive

to the PRB). Peabody represents the largest coal producer in the United States with a market capitalization of \$9.0 billion (Peabody owns mines outside the United States.) This is large for the coal industry, but relatively small compared with other energy industry leaders (e.g., Exxon Mobil's market capitalization is \$357 billion). These four producers generate just over \$14 billion in revenue from all mines in their collective portfolios. Each of the companies is producing relatively strong returns. Alpha Natural Resources is particularly challenged, given its recent acquisition of Massey Energy, a Central Appalachian mining concern, and certain historically high-cost mining issues. Arch Coal is also challenged, given its high exposure to thermal coal and recent acquisitions. Stock prices have been volatile and declining over the past year, reflecting broad global uncertainty, a soft domestic market, and company-specific challenges.

Exports

The coal producers of the PRB have embraced a market view of expansion during worldwide uncertainty and uneven economic growth. In the broadest sense, global opportunities are expanding while U.S. coal domestic markets are shrinking and unstable. Changes in production and concerns about environmental risk have altered the future use of coal in the United States. Coal industry analysts project a worldwide growth in demand of 4 billion tons of coal from 2008 to 2035, with demand heavily concentrated in China, India, and the Pacific Rim.⁸⁷

Coal Producer Export Activity

Because of the potential for export sales, coal producers with holdings in the PRB are seeking to increase their investments in the region, despite a general drop in U.S. demand for coal-fired power plants.⁸⁸ Although export sales from the PRB are currently quite small,⁸⁹ a growing international market has created incentives for coal producers to adopt aggressive export scenarios.⁹⁰ Coal producers are increasing exports from the PRB,⁹¹ announcing new deals,⁹² exploring new markets,⁹³ and investing in new rail and shipping capacity.⁹⁴ Those scenarios support the proposition that selling PRB coal in international markets will provide higher per-ton revenue yields. Currently, all of the four major coal producers have export strategies related to their coal portfolios in the PRB:

- **Peabody Energy** is the world's largest private sector coal producer. One-third of its total reserves are in the Powder River Basin, and the region is one part of Peabody's strategic global network of coal reserves and trading relations. The company has announced deals with Asian partners for export of PRB coal and briefed Wall Street coal analysts on enhanced revenue benefits and share value of PRB exports. In addition, Peabody has consistently advised investors of its activities in the PRB export area and announced its participation in the proposed Bellingham/Cherry Point terminal expansion in Washington State to export PRB coal;
- **Arch Coal** is the second largest producer of PRB coal. In 2011, Arch Coal opened its first overseas office in Singapore.⁹⁵ Throughout 2010 and 2011, the company stepped up export activity and provided revenue projections on future deals,⁹⁶ informed investors of its export activities, announced rail transport and nationwide terminal investments,⁹⁷ and secured new mine reserves for export purposes in the region.⁹⁸

- **Alpha Natural Resources'** recent merger with Massey Energy consolidated the company's position as a leader in the nation's coal industry. Its export efforts are currently focused largely on its metallurgical and thermal eastern coal reserves. Alpha controls more terminal space in the Gulf and East coast than any other coal producer. Although the company is supportive of West Coast terminal efforts, it has not publically taken a financial position regarding any of the port proposals to date.⁹⁹
- **Cloud Peak Energy** is the only pure play PRB producer of the major corporations in the region. In 2011 the company announced an agreement for terminal expansion¹⁰⁰ and continued to support other similar projects.¹⁰¹ Cloud Peak's annual revenue and share value already benefit from PRB exports. In 2011 the company exported 4.7 million tons, or 4.8 percent of its production. These exports accounted for 18.5 percent—or \$287 million— of the company's \$1.55 billion total revenue.¹⁰²

Ultimately, these factors all contribute to a long-term rising price environment for Powder River Basin coal, as markets shift and coal production undergoes a major transformation. The continued pressure by coal producers for more federal coal leases, even in the face of historically low current prices, strongly attests to the industry's bullishness in the long-term health of the region. Despite this rising price environment, there is uncertainty and increasing volatility. Although they will continue to supply the shrinking—but still significant—demand for domestic electricity generation, coal producers are mitigating this uncertainty with a greater reliance on exports.

For the nation as a whole, and specifically for the Powder River Basin, these market changes point to efforts by coal producers and financial interests to globalize production, distribution, and pricing of PRB coal. The result: volatile and upward pressure on long-term prices for the traditional consumer of domestic coal—the U.S. electricity industry and the American public.

Cost of Production Pressures

The BLM also fails to consider recent government studies that raise questions about the rising cost of production of the region's coal reserves. Reserves are relevant to market forces in the sense that the factors described in this paper place additional pressure on PRB production. A 2008 study by the United States Geological Survey (USGS) raised concerns about the diminished size of the PRB's economically recoverable coal reserves.¹⁰³ The USGS surveyed the mines and coal beds in the Gillette Field—which is responsible for 37 percent of the nation's coal supply—and calculated the available coal resources, the amount of recoverable coal, and then the coal reserves.¹⁰⁴ (Coal reserves, a subset of coal resources, can be defined as the portion of recoverable coal that can be mined, processed, and marketed at a profit at the time of the economic evaluation.) The report concluded that the Gillette reserves have significantly less recoverable coal at affordable prices than previously thought. Given the sheer size of the field, the USGS report has significant repercussions for the coal industry.

In June 2009, the *Wall Street Journal* surveyed the opinions of industry leaders and the EIA regarding the USGS findings. The EIA’s response conceded the fundamental accuracy of the report findings: “The Energy Information Administration, part of the Department of Energy, says it is reassessing its coal tally in light of the new USGS data. It intends to create a new coal baseline from which it will begin its annual subtraction as soon as [it] can.”¹⁰⁵ Fundamentally, the EIA’s decision to create a new baseline recognized the need to more carefully monitor this valuable resource. In light of evidence that the current accounting method is unreliable, the administration’s challenge is even more urgent. A representative from Peabody Energy also affirmed the accuracy of the USGS findings, stating that the entity “made a leap forward with this study.” The industry spokesperson added that the company has reached similar conclusions to the USGS.

The issues raised by the USGS report, and the EIA’s acknowledgement of the problem, are fundamental. Yet there are no references to the USGS study in any formal BLM documents related to coal lease transactions. By effectively ignoring the USGS’s red-flag warning, the BLM reaffirms that the judgment of coal producers based on the mine plans submitted in applications will be the underlying basis for its coal lease awards. The BLM has failed to disclose a coherent public management opinion on the USGS study as it relates to the agency’s decisions on assessing potential impacts on future coal quality, mine location, price, cost of production, or any of the other critical factors the study raised. Instead of taking into account critical larger market forces, the BLM tends to use outdated information and poor market analyses that do not reflect conditions in current or future coal markets.

By ignoring basic market realities, the BLM adopts assumptions that maintain a skewed view of potential scenarios and likely outcomes. The USGS study, as well as the EIA’s response, also supports the thesis that coal prices in the PRB will rise. The BLM’s consistent disregard of market factors understates the demand pressures on the PRB market. These understatements enable the BLM to repeat its historic practice of low valuations. Table B shows that coal producers with holdings in the PRB are seeking to increase their investments in the region. In 2011, Peabody, Alpha, and Cloud Peak all successfully secured new leases under the BLM lease program. Recently, Arch Coal secured additional tonnage under state-leased coal reserves in Montana.

Company	Total Reserve Tons (in billions)¹⁰⁶	Powder River Basin Tons (in billions)	2011 Pending Applications¹⁰⁷
Peabody Energy¹⁰⁸	9.2	3.1	3
Arch Coal¹⁰⁹	5.5	3.26	3
Alpha Natural Resources¹¹⁰	5.0	.65 ¹¹¹	1
Cloud Peak Energy¹¹²	1.4	1.4	1

Table B: Coal Reserves of Powder River Basin Producers

Source: TR Rose Associates

Loss of Central Appalachian Coal

Recoverable reserves in Central Appalachia are almost depleted. The fundamental reason for the depletion is geological, as the area has been the most intensively mined region in the United States for decades. Although the remaining reserves still possess high energy and low sulfur content, they are in areas more difficult to mine.¹¹³ The complexity and increasing cost of mining Central Appalachian coal has led producers to adopt controversial mining techniques, such as mountaintop-removal coal mining. With the adoption of more complex and destructive mining techniques comes increased oversight and regulation. These factors have led to dramatic increases in the costs of coal production.¹¹⁴ The rising costs of production have made coal less competitive as a source of fuel,¹¹⁵ as most of the major utilities have indicated that they no longer consider Central Appalachian coal an economically viable fuel for their coal-fired plants.¹¹⁶ As less coal is available from Central Appalachia, more pressure will be placed on the nation's other coal producing regions—including the Powder River Basin—to fill the void.

Declining Price of Natural Gas

Throughout the last two years, natural gas prices have declined precipitously, and most analysts agree that these prices will stay low for the foreseeable future. The decline in prices has sufficient depth and duration to shift utility spending away from coal and toward natural gas and renewables. The decline of natural gas prices is a significant economic factor that contributes to the retirement of existing coal plants.¹¹⁷ Low natural gas prices have also led to low power prices and have effectively diminished the ability of Central and Northern Appalachian coal to compete in current power markets. As natural gas prices remain low, regional markets and individual plant performance indicates potential for the Illinois Basin to lose market share. Powder River Basin coal, because of its relatively low price, shows less chance for displacement by natural gas.¹¹⁸ As domestic coal markets adapt to these changes, the Powder River Basin and Illinois Basin can both expect greater demand pressures from domestic electric generation.

Recent Coal Leasing: Still Below Fair Market Value

The evidence demonstrates that the BLM is ignoring the major forces driving change and their resulting impact on price. In Records of Decisions from 2011 sales, the BLM fails to consider the loss of Central Appalachian coal, the increasing levels of coal exports, the decline in natural gas prices, or the specific impact of these factors on the supply, demand, and price of PRB coal.¹¹⁹ As demonstrated by high bids from coal producers on the BLM leases in the PRB, as well as these producers' aggressive and increasing interest in the BLM lease activity, the long-term prices of coal from the PRB will continue to increase. This is occurring despite currently low domestic coal prices and the prospect of generally diminished use of coal for electric generation in the United States. Long-term price increases specific to the PRB are being driven by the rise in production costs, domestic demand, and exports. Coal producer activity anticipates a period of long-term price increases and profitability.

Regional production trends have created intensified mining pressures on PRB coal producers and placed upward pressure on long-term PRB prices. At the time of this writing, PRB short-

term coal prices, as with all domestic coal, are low. Coal producers and the BLM are nevertheless pressing forward with their applications for new PRB reserves.¹²⁰ Moreover, it is against this backdrop that recent lease issuances by the BLM continue to demonstrate the agency's pattern of providing coal to producers at below fair market value.

The sale of the West Antelope North II tract to Cloud Peak best demonstrates how the BLM is still failing to receive fair market value for federal coal leases in the PRB. In this case, the BLM failed to consider changing market dynamics, including, most critically, the increasing level of exports. Since no detailed, formal independent review is permitted by BLM, the clear indication used in this study is the market itself. In May 2011, the agency agreed to a lease bid from Cloud Peak Energy. The so-called fair market value level accepted by the BLM was low, *Platts Coal Trader*, commented on the view held in the coal industry that the price was low. Cloud Peak's stock price rose precipitously on the day of the sale, reflecting market reaction that the company had received a favorable deal. One stock analyst for UBS raised the company stock rating based on the lease award. Six weeks later the BLM received record high bids on two coal tracts that contained lower-quality coal than that in the Cloud Peak tract. The message is clear: Four separate, independent market sources familiar with the deals offered information that raised redflag warnings that the BLM's fair market value on the Cloud Peak lease was defective. (For additional detail on these case studies, see Appendix B).

In another, more-recent sale, BLM awarded a lease to Peabody Energy for the control of the South Porcupine reserve. BLM accepted the company's bid of \$1.11 per ton. SNL Energy's *Coal Report* stated the following:

Peabody's South Porcupine bid also looks like a bargain compared to the August 2011 auction in which Alpha Natural Resources, Inc. unit paid \$1.10 per ton for the West Caballo reserve, which contains coal of significantly lesser quality than the South Porcupine."¹²¹

PART IV: IMPLICATIONS FOR THE FUTURE

Findings

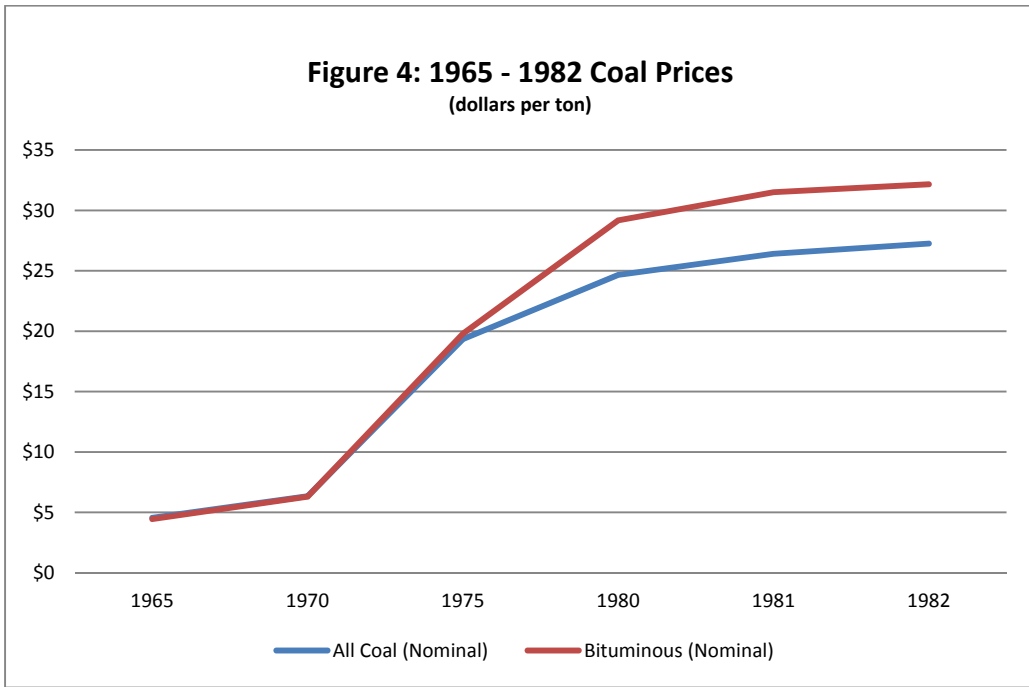
An analysis of the BLM’s federal coal-leasing program presents five critical points of consideration for policy makers, investors, public interest groups, land managers, elected officials, taxpayers, and ratepayers.

1. The U.S. government’s possession of a large coal asset in the PRB constitutes a monopoly of supply.
2. The government acts as a price leader—an entity with the ability to set the price direction of western coal.
3. Oversight of the federal coal program has been nonexistent.
4. The BLM’s appraisal process is inherently flawed and fails to take into consideration larger market forces; and BLM’s failure to correct its flawed appraisal process has resulted in the loss of approximately \$28 billion in foregone revenue to federal and state governments.
5. The BLM’s process in selling federal coal has created a de facto national energy policy.

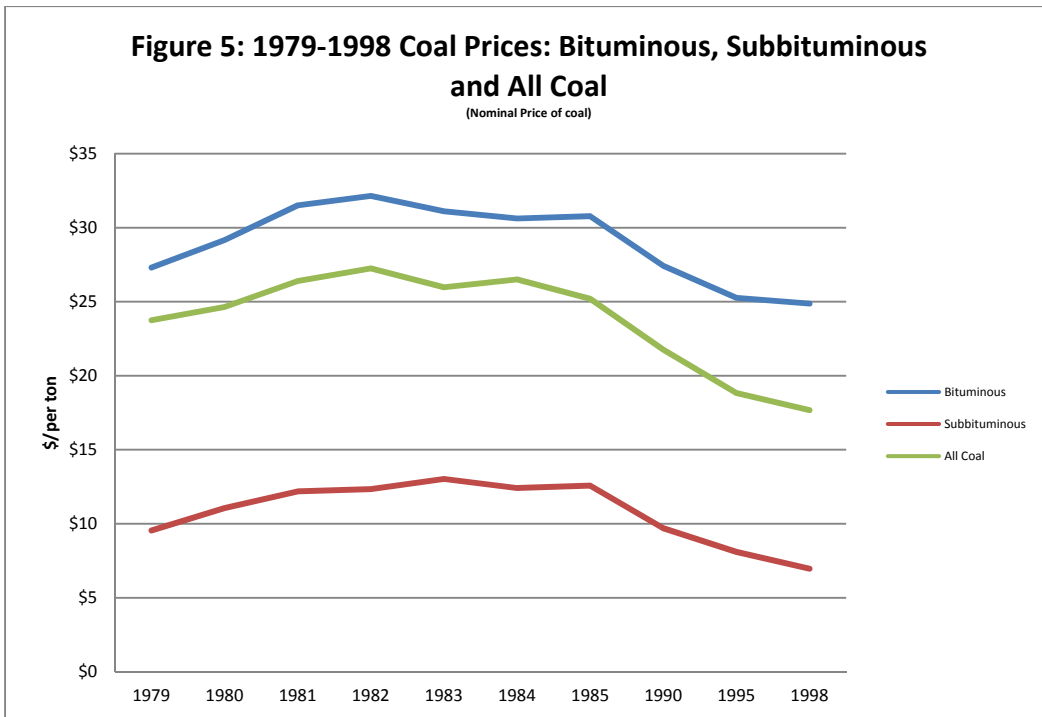
Each of these findings has significant implications for current policies.

First, the U.S. government’s possession of a large coal asset in the PRB constitutes a monopoly of supply. The existence of a monopoly means that action taken by the owner will lead and shape—if not dominate—the markets where it holds sway. At the time of the 1982 sale, the federal government owned 80 percent of the federal coal in the Powder River Basin. The remaining 20 percent—which consisted of state and privately owned coal—could only be developed jointly with the federal government as a result of intermingled ownership patterns.¹²² In addition, the laws governing federal coal-leasing policy (originally adopted in 1920 and then amended in the 1970s) ultimately gave the DOI control of almost every aspect of production. As Robert Nelson, a leading scholar of federal coal policy writes, “There is not much of a distinction between western coal development and federal coal development. As one goes, so will go the other.”¹²³

Second, the government acts as a price leader of western coal. As a result of its vast ownership of resources, the government *is* the price leader for western coal, meaning that the government’s actions and policies shape the market price for PRB coal.¹²⁴ The timing of the 1982 sales (and the significant volume of coal leases) flooded the market with cheap coal and drove prices down for more than two decades. *Figure 4* and *Figure 5* best illustrate these market distortions. *Figure 4*, which shows the price of coal between 1965 and 1982, demonstrates the historic upward trend in the price of coal prior to the 1982 transactions. However, *Figure 5*, which charts the price of coal from 1982 to 1998, demonstrates that a significant shift occurred in 1982, after which nationwide coal prices declined.



Source: TR Rose Associates



Source: TR Rose Associates

Rather than serving as a policy that *reflected* the market, the so-called fair market value standard used by the BLM was more of a policy tool that *led* the market. The inherent power of

the DOI over the marketplace was crystallized in a 1979 DOI report: “The government is the price leader for western coal properties due to its vast ownership of unleased, low cost coal. All lease prices will tend to go to the level the Department chooses.”¹²⁵ BLM’s statements in response to the GAO in 1994 that the decline in coal prices occurred (after a decade-long steep rise) because of an increase in the supply of low cost coal, reflects the flooding effect of the 1982 decision on price and market perception.¹²⁶ It also represents the DOI’s comprehension of its role in U.S. coal markets.

Third, oversight is nonexistent. In the past 30 years, neither Congress nor any independent entity has conducted an audit, study, or independent review of the program. In addition, there has been no follow up to any of the evaluations conducted in the wake of the 1982 scandal. The last review of the leasing program was the 1983 GAO audit.

Fourth, the BLM’s process is flawed and fails to take into account larger market forces. The BLM’s process is shrouded in secrecy, as no evidence suggests that federal coal leases sold since 1982 were for fair market value. In addition, the agency fails to take into account larger market dynamics, such as the decline in Central Appalachian coal, the rising level of exports, and lower natural gas prices. These market forces are driving up long-term coal prices in the PRB. However, the agency is not recognizing these factors in any of the Records of Decision related to current lease sales.¹²⁷

Fifth, the BLM’s process of selling leases for less than fair market value has resulted in a loss of \$28.9 billion to federal and state governments. By applying the adjustments to fair market value used by the GAO in 1983, adjusted for 2011 dollars, the author has found that cumulatively more than \$7.1 billion in bonus payments and between \$20.5 and \$21.8 billion in royalty payments has been foregone in federal and state revenue since 1982.

And, finally, the sales had a profound impact on the nation’s energy policy. The availability of cheap coal from the PRB has not only provided the industry with a price advantage that has allowed much deeper market penetration throughout the years—from 5 percent in 1982 to nearly 48 percent today—but it has also had significant implications for the nation’s energy policy. For the past 30 years, the U.S. government has effectively selected coal as the primary energy source to power the nation’s electric grid. In addition to its market penetration, analysts have concluded that coal’s dominance has effectively prevented the development of public-private partnership policies and programs to improve energy diversity in the United States.¹²⁸ Others have observed that U.S. energy policy, while offering significant support to the coal industry for decades, has in fact failed to produce sufficient innovation in the field of coal-burning technology. As GE’s chief executive officer Jeffrey Immelt has reflected, coal boilers are a backward-looking energy technology.¹²⁹

Recommendations

Between now and 2035, the EIA estimates another 12 billion tons of coal will be produced in the PRB. Coal producer’s estimates of production from the region are even higher. In addition,

no known oversight activities are planned for the program. Given the findings of this study, three specific top-level recommendations emerge from this report.

In the short-term, it's imperative that:

1. The Department of the Interior should implement an immediate moratorium on the sale of federal coal leases in the Powder River Basin.

The current lease program is purportedly designed to provide coal supplies for U.S. electricity generation at a fair market value. The DOI's real rationale for the sale of below market value PRB coal was to provide *cheap* coal for *cheap* electricity. Although the demand driver for expanded coal production was once domestic electricity generation, this is no longer the case. While the region will continue to provide coal to meet domestic energy needs, over the long-term, as PRB coal becomes more expensive, the primary revenue driver for coal producers will be export sales.

Today, the demand for new PRB lease applications and coal reserves is driven by coal producers responding to international supply and demand price signals in global markets, not to meet the needs of the nation for electricity. This is modern-day coal producer speculation, a practice that has been a concern of both Congress and presidents going back to Theodore Roosevelt. An immediate moratorium is necessary because the actions of these coal producers have clear implications for the U.S. economy and its environment, as well as the electricity grid and political system. In the history of the coal lease program, policy makers have implemented moratoriums when far fewer challenges faced the program.

2. The Department of Interior should reinstate the PRB as a Coal Production Region

BLM's Records of Decision (RODs) reflect the fact that it is paying attention only to low-level microeconomic issues when selling coal. This fundamental failure reflects the inadequacy of an agency with neither a publicly accountable, regularized system of monitoring and analyzing coal markets and trends nor the information necessary to grapple with the globalization of PRB coal. There are no publicly available documents or studies that reflect the multiplicity of issues that the agency faces in this time of dramatic change. The claim in the RODs, for example, that use of coal for domestic electricity protects national security when coal producers will actually export increasing amounts of coal to Asia borders on the Kafkaesque. Redesignating the PRB and other areas as coal production regions will help the BLM address these broader economic issues.

3. Congress must conduct a fundamental review of the federal coal-leasing program, beginning with an evaluation of the use of U.S. coal assets.

Eighty percent of the coal in the PRB belongs to the U.S. government, granting the federal government an effective monopoly on western coal. The effective monopoly has ramifications for coal production throughout the country. Given that this resource is a public asset, coupled with the fact that there are significant economic, environmental, and foreign policy dimensions to this issue, a thorough review of the program is warranted. The failure of Congress to publicly address the coal-leasing issue, despite rising production and revenue growth, is a significant lapse that is only now recognized. Critical to the debate are the following questions: What, for

the foreseeable future, will be the primary use of PRB coal? Who will be its primary beneficiaries? What are the future prospects for coal use in America?

In addition to these primary recommendations, the author also suggests the following:

The General Accounting Office should conduct an audit of the Bureau of Land Management's federal coal-leasing program.

From the early 1970's through 1983 the GAO produced over 20 policy driven audits of the coal lease program. The BLM's federal coal-leasing program has not been the subject of an independent review in nearly 30 years. Although the GAO reviewed the program in 1983, it has never conducted an audit of the program since issuing its original report (a 1994 audit of a specific lease problem provided some additional insights but was not an audit of the full program). Recently, as a result of changing market conditions, Representative Edward Markey requested an audit of the program in order to provide Congress with up-to-date analysis and information. The BLM responded in a hostile manner. The fair market value lease program—which is shrouded in secrecy on the grounds of protecting the federal government and third-party interests—warrants investigation.

The Office of the Inspector General should conduct oversight activities regarding the Bureau of Land Management's interaction with coal producers.

During the 1982 scandal, a federal investigation discovered that DOI staff leaked confidential pricing information to coal industry representatives. In the wake of the scandal, both the Linowes Commission and the GAO Office of the Inspector General acknowledged the need for more oversight of BLM's dealings with the industry, recognizing potential conflicts of interest.

An independent entity should evaluate the Bureau of Land Management's coal-leasing program, with specific attention paid to fair market valuation.

Throughout the past 30 years, there has been a lack of public oversight of the federal coal-leasing program. The lack of oversight, accountability, and transparency continues today. The BLM's policy requires public inspection and external review to ensure program integrity, particularly those aspects of the process that are protected by BLM's confidentiality claims. However, the external review process has not occurred. Given the scandal that ensued after the 1982 lease sales—and the promise of reform that never materialized—it is apparent that a new entity, independent of the current oversight bodies, must be created in order to provide adequate oversight. This organization, which could be patterned on the Independent Private Sector Inspector General, could provide an external review of the program and ensure public inspection. The entity, which should remain in existence for at least 10 years, should regularly report to the president, Congress, and the public.

Conclusion

The Department of the Interior's Bureau of Land Management (BLM) presides over a large publicly owned coal asset. The BLM's mission is to manage the asset so that the government receives a market price for the sale of the nation's coal. As this report demonstrates, there is no

evidence that the BLM receives a market price for the coal. There is, however, evidence that the government has foregone billions of dollars in revenue.

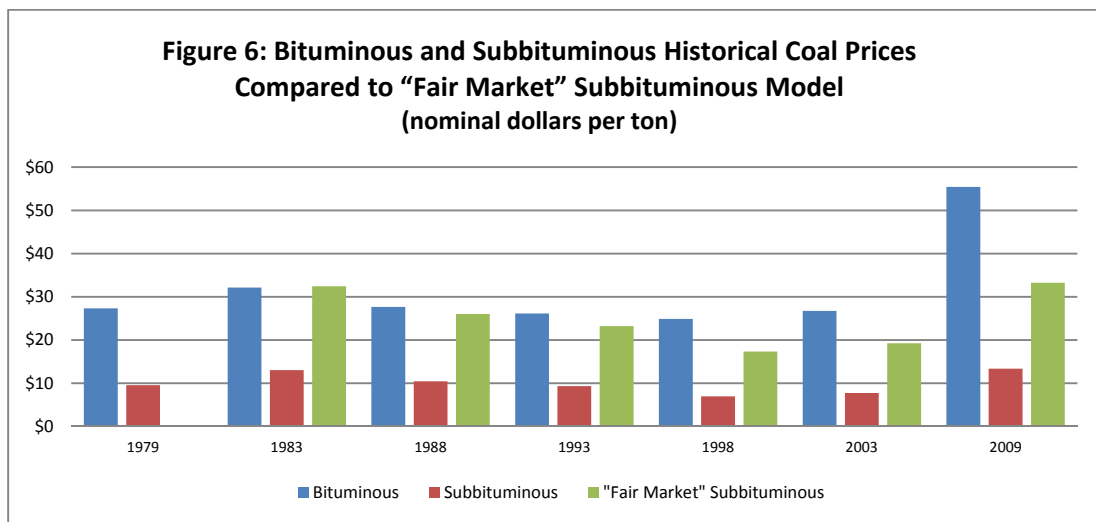
The fundamental reason provided by the agency for its failure to adhere to the market standard—although the agency alternately agrees and denies the facts of the matter—is the need for the government to provide low cost coal. This paper demonstrates that the BLM has kept coal prices artificially low by selling it to coal producers at below market value. In today’s rapidly changing environment, the business consensus that produced BLM’s practice of selling coal below its fair market value is unraveling. Coal producers, now faced with a changing market, a host of potential regulatory conditions, and far more lucrative opportunities in the export arena, will be raising the price of PRB coal, and the nation’s coal in general, to support their own needs. The long-term price outlook for PRB coal is upward and volatile.

The BLM is poorly prepared to handle these issues. The coal industry, which has a track record of limited transparency, has enjoyed a long history as a protected political class. Unfortunately, BLM has adopted this same culture of insularity. The last public discussion on its mission and program was almost 30 years ago. The stakes are much higher now.

APPENDIX A: DISCUSSION OF MODEL

Discussion of Calculation and Implications of Model

The model prepared for this study keeps PRB prices that coal producers would charge to utilities effectively competitive. It achieves this even though PRB prices would rise beyond the historically depressed price levels in the PRB. This model assumes that the price of PRB coal could have been considerably higher over the last 30 years and that it still would have gained market share. In 1983, PRB coal prices were considered high. The EIA and another analyst's forward-looking view at the time projected continued, upward price pressure on coal prices.¹³⁰ The BLM's original appraisals, in a number of cases, estimated higher coal prices as did the GAO's own final conclusions about lost revenue. The model used in this study shows that adjusted PRB coal prices would have remained competitive with Central Appalachian, Illinois Basin, and Northern Appalachian coal. Coal prices from these other regions have been consistently higher at the mine mouth due to coal quality and the advantage of location. The model assumes, as does BLM in its statements to the GAO regarding the depressive effect of low-cost PRB coal on national coal prices, *that the BLM is a price leader*. Therefore, setting a higher price for PRB coal would have allowed for greater market headroom for eastern coal as well.



Source: TR Rose Associates

The model presupposes increases in PRB coal as if BLM's process actually reflected the market rather than directed it. It is logical to argue that the high prices presumed in the model would have been a disincentive to production. Therefore, the amount of coal production would never have increased as rapidly as it did, and so, no royalty revenue was actually lost. Fundamentally, however, this point is irrelevant to the discussion. The U.S. government has sold 9 billion tons of coal since 1982, and the public record shows that the first 1.6 billion tons were sold at an inappropriate price. However, the economic implication of the model needs some discussion. The primary point: **The model assumes that rising PRB coal prices would not have foreclosed a rise in the use of PRB coal.**

First, the variance in price identified by the industry (and this study) between PRB coal and the general coal market is wide. So is the variance between the cost of electricity produced by PRB coal and electricity produced with other fuels.¹³¹ This wide gap, identified by WMA and Peabody analysts as well, suggests that PRB coal would be competitive and profitable if deployed at higher prices.¹³² The U.S. government from the 1970s to the present has promoted coal as a priority.¹³³

Second, the coal story has an economic logic that is specific to the coal industry and its interaction with the investment and regulatory needs of the utility sector. Economic theory does not easily explain coal markets. A period of rising coal prices, within limits, could be sustainable in some regions because capital outlays for new and retrofitted coal plants are long term. Markets can change. The price of competitive energy sources might increase more rapidly than coal, public regulatory bodies might be committed to coal and/or transmission logistics might require ongoing operation of coal plants despite disadvantageous pricing. Historically, flat pricing, even declining prices, for coal did not act as a disincentive to coal production.

On the contrary, low prices and modest margins for coal producers served as a tool of market penetration for coal and coalmine expansion. Investor-owned utilities, their regulators and public power agencies engage in a constant process of investment selection for upgrade, expansion and future consideration of energy options. These options are influenced by the price of transportation and fuel, construction costs, financial markets, the regulatory landscape and a host of local, state, and national (and increasingly global) issues. The use of very low-priced coal to achieve market penetration over the past 30 years was one way to accomplish a dominant position for coal.¹³⁴

The likely outcome of higher PRB prices would have been higher coal prices generally, but not necessarily a curtailment of coal's market share increases. As the 1980s became the 1990s and then 2000s, coal's competitive advantage stayed strong against nuclear, gas, and other competitors.¹³⁵ The headroom in coal pricing in the PRB created substantial market leeway for coal to continue to gain market share.

It might be argued that PRB coal prices would not rise to the level estimated by this study. Even if the fair market lease prices were systematically increased, it would not necessarily have an impact on the market price of coal. BLM refuted this position when it declared to the GAO that its 1982 decision flooded the markets with coal and pushed prices down for the better part of a decade. BLM believes, and this author concurs, a policy choice backed by years of implementation practice consistent with that decision sent the price of coal plummeting. Other policy decisions can be designed to send prices in the opposite direction if desired by a monopoly owner.

In addition, the GAO study showed that significantly higher market coal prices were to be expected in the early 1980s and beyond. BLM's prices in some instances exceeded the coal

prices levels used in this study. For example, BLM's original appraisal prices for two tracts were 26 and 39 cents per ton.¹³⁶ GAO even estimated one coal tract price at 60 cents per ton.¹³⁷

Furthermore, the BLM's claims that coal producers would not bid for higher-priced coal, especially in the 1982 market, is belied by the fact that one coal producer doubled its bid for the same coal tract between April and October 1982.¹³⁸ On another tract BLM originally set the price of coal at less than one tenth of one cent per ton (0.029 cents per ton). Then, due to an oversight, it listed *and sold* the coal for 2.5 cents per ton. A coal producer paid a price 85 times higher than the amount that BLM estimated was fair market value.¹³⁹ At bottom, the price indicator—coal sold for below fair market value—has an impact over time. The GAO makes clear that the use of noncompetitive prices results as the basis for future FMV determinations is inappropriate.¹⁴⁰ Yet, from the limited information available on the public record this is the practice BLM has followed for decades.

GAO found that when coal tracts are designed to serve one coal company and thereby eliminate competition, the value of the tract increases and so should the revenue to the United States Treasury. The FMV, under conditions of no competition, should not then be calculated as if a market exists, but instead be established based on the value of the tract to the individual company receiving the advantage of this anticompetitive practice.¹⁴¹

These facts and this analysis indicate a far more fluid and upward potential for PRB coal prices. The 1982 coal sales decision was the continuation of a long-standing practice of leasing coal for below fair market value. Higher prices over time would not have severely restricted the market penetration of PRB coal. The same interplay of federal monopoly policies, state regulatory decisions and coal industry political power is still at work today. These forces act as a brake on the loss of coals market share.¹⁴² The political and market power of the coal industry has been relatively diminished compared to prior periods in history.¹⁴³ The industry nevertheless is still able to persuade state regulators and political decision makers, particularly those in the public power realm,¹⁴⁴ to stay with coal and mobilize against greater fuel diversity in the nation's system of electricity generation.¹⁴⁵ This is true even when coal is not competitive and is causing actual financial harm to those held captive to prior decisions.¹⁴⁶

The explanation for the loss of revenue and value to the United States government is embedded in its policy choice to supply low-cost electricity to the nation. At minimum, that decision had a substantial price tag for the U.S. Treasury. The fact that the United States government holds monopoly control over a natural asset, that has value only upon extraction, creates a contentious basis for assessing a true fiscal cost. More research, transparency, and debate would advance the discussion of how the BLM actually managed the nation's coal asset for the last 30 years. However, the discussion makes clear that any successful energy strategy related to power generation embarked upon by the private sector will require considerable, long-term levels of public support of both a financial and policy nature.

Coal was always abundant, but the evidence suggests it was never cheap.

APPENDIX B: RECENT COAL LEASE CASE STUDIES

Cloud Peak's Purchase of West Antelope II North

On May 11, 2011, the BLM announced that Antelope Coal, LLC (an affiliate of Cloud Peak Energy), was the successful bidder on the West Antelope North II coal tract in Wyoming.¹⁴⁷ The tract contained 350.3 million tons of coal (8967 Btu) and the 85-cents-per-ton bid placed the total value of the lease at \$297.7 million. This sale was significant for a variety of reasons, but most notably: (1) Cloud Peak was the sole bidder; and (2) the sale enabled the company to add \$293 million to its value—approximately 30 percent of total company assets.¹⁴⁸

The day the sale was announced, *Platts Coal Trader* noted that in prior sales where no competition took place, and where bid prices were low, the BLM rejected the bid and required a producer to come back with another, higher bid:¹⁴⁹

Coal producers in Wyoming's Powder River Basin stand to benefit from Cloud Peak's purchase of the West Antelope North last week, which industry observers say came at a relatively low price that acknowledges both the higher price of mining and perhaps, a more cloudy future for domestic coal markets.¹⁵⁰

The same article supports the "low price" perception given how the market reacted to Cloud Peak's stock price: "News of the lower-than-expected bid prompted UBS to raise its stock price target for Cloud Peak from \$26 to \$31 per share." Cloud Peak's stock price rose by 4.8 percent on higher than average volume trading at the time of the sale announcement.¹⁵¹

Platts Coal Trader's coverage of the bid and stakeholder commentary on the BLM decision also provides important details, noting that analysts and industry officials keyed in on the stripping ratio as a critical issue that might have pushed the tract price down. All other things being equal under the BLM's fair market protocol, rising production costs would decrease the value of the coal tract. "Mining costs are affected by strip ratios; that's probably one of the biggest determinants in mining costs," stated a BLM official, speaking on condition of anonymity because the agency does not comment on lease sales.

The article also pointed out that the lack of transparency at the BLM made it impossible for outsiders to understand how decisions are made. How rising coal cost of production might be weighed against, say, rising coal prices is not a matter of regular discussion and disclosure. How the BLM's fair market appraisal might navigate the conflicting market pressures of high inventories, low natural gas prices, and rising exports is discussed in the *Platts Coal Trader* article as well. As an industry commentator states, "The salvation is going to be exports off the West Coast."

Ultimately, the BLM accepted Cloud Peak's bid because it met the fair market value standard. Although the actual fair market value is confidential, *Platts Coal Trader's* analysis raises some

questions about how agency officials calculated the actual value. The sale raises three critical issues:

First, the BLM appears to have valued the stripping ratio as the driving factor in the FMV calculation. Cloud Peak read the same geological data, and, knowledgeable about the FMV appraisal system, developed its bid accordingly. Understanding the coal market, the likelihood of competition for the tract (none) and the real price achievable on the market, Cloud Peak strategically placed its bid. The UBS and the stock market boost present a clear picture: the BLM undervalued the coal asset by giving more weight to losses on the stripping ratio downside against the stronger rising price upside. Cloud Peak understood the FMV lease appraisal system and exploited it to its advantage.

Second, the BLM's view about the trajectory of coal prices is defective. Long-term PRB coal prices are rising. The BLM has ignored this reality. As noted in several places throughout this analysis, the agency is aware of the value of the leases it awards. It is also aware of the implications for the market and for the coal producers. Cloud Peak's bid may have met BLM's fair market value standard, but as has been historically the case with the BLM, the BLM's determination of fair market value is far below the price Cloud Peak will get on the broader market for the coal.

Third, the discussion about exports is also missing from BLM's decision. However, it is very much part of the market analysis of the transaction, as the quote from the industry spokesperson demonstrated. There is no mention of exports in the agency ROD for the lease. The ROD is the only formal, publicly available document that provides a rationale for the lease. At present, Cloud Peak only exports from its Spring Creek mine in Montana, but higher Btu value coal is an important part of its current export strategy.¹⁵² The West Antelope tract would seem to have a high potential for export.

The Sale of the Belle Ayr North Coal Tract

On July 13, 2011, Peabody Energy announced it was the winning bidder for Belle Ayr North coal tract. Its bid of 95 cents per ton for the 1,671-acre parcel added 220 million tons of 8500 Btu coal to its 2.9 billion PRB reserve.¹⁵³ Peabody's bid exceeded that of Alpha Natural Resources, the original applicant for the site. Alpha's bid was for 78.2 cents per ton.

Peabody's bid was the second highest bid on record for a coal tract, exceeding the per ton price of coal in the Cloud Peak transaction. It was particularly surprising given that the coal quality for this tract, 8500 Btu, is lower than the quality on the Cloud Peak tract (8967 Btu). The sale was also controversial since it is unprecedented for an applicant for a site (Alpha) to lose out at an auction. Alpha's interest in increasing its holdings in the Belle Ayr tracts built upon its other Belle Ayr holdings. However, the Belle Ayr tract Alpha identified was contiguous with Peabody's Caballo mine holdings. Although the auction process is supposed to be competitive, the coal tract selection process has failed to produce robust competition in the past.¹⁵⁴

Peabody's CEO Greg Boyce offered some insights into the company's views on its motivation surrounding the sale, which involved a competitive bid unusual for federal lease auctions. "The PRB has been the cornerstone of our production platform for a number of years, and we've been active in PRB lease sales over a long period of time." He then added:

So as we look at how you continue to sustain the level of production when you're producing 140 [million] to 150 million tons a year of PRB coal, you have to continue to replace that reserve base. So, it shouldn't be any surprise that for any lease sale out there, we're going to actively look at those reserves, look at their proximity to our operations, how they could be integrated into our operations in order to not only provide longevity but also the potential to expand as the economy here in this country recovers and exports become a much bigger component of PRB in the longer term.¹⁵⁵

The Sale of the Caballo West Tract

On August 17, 2011, the BLM accepted Alpha Natural Resources' bid for the Caballo West tract.¹⁵⁶ The original applicant for the tract was Peabody Energy. Alpha's bid of \$1.10 per ton, or \$143.4 million for the 1,024-acre, 8500 Btu coal tract, represents the highest price paid for a tract in the history of the program.¹⁵⁷ Peabody Energy's second-place bid of 98 cents per ton was also historically high.

The Caballo West auction took place shortly after Peabody Energy outbid Alpha, the original applicant, on the Belle Ayr site. Competition for these tracts is extremely rare. According to the *Platts Coal Trader*, "Of the 14 coal tract auctions completed by the Bureau of Land Management since 2000, only this auction and the last one in July, both between Alpha and Peabody, have been lost by the company that applied for the initial lease by application, or LBA."¹⁵⁸

Alpha's and Peabody Energy's willingness to pay high prices for mid-quality PRB coal suggests a long-term demand for PRB coal. SNL Energy's *Coal Report* viewed the implications of the auction:

The salient factor for other PRB coal producers out of all this is that the two recent bidding wars will likely drive up the price for the future federal leasing for Wyoming PRB coal, because BLM takes into account prior bid amounts when setting its secret fair market value estimates for future coal tracts. BLM does not reveal how it sets its fair market value estimates, so it is not clear how it will factor into these two recent winning bids for mid-Btu coal when it sets value for future reserves sales of high-Btu coal of mines further to the South of Caballo and Belle Ayr, and low-Btu mines farther to the north.¹⁵⁹

The Sale of the South Hilight Tract

In December 2011 the BLM awarded Arch Coal a federal coal lease for the South Hilight tract in the southern PRB. The tract sold for \$1.35 per ton for the 222 million tons of 9000 Btu coal.

Arch Coal was the sole bidder on the tract. The \$1.35 per ton bid for highquality BTU coal reflected Arch's view that the region would produce sufficient demand at rising prices.

According to Steve Leer, chairman and CEO of Arch Coal:

Because of their very high quality, the South Hilight reserves are exceptionally well positioned to serve both the growing export market and expanding domestic demand for ultra-low sulfur coals.¹⁶⁰

The Record of Decision in the case, signed on March 1, 2011, makes no reference to the use of the coal in export markets. It concentrates on coal burning for U.S. domestic electric and compliance with pollution control laws in the United States.¹⁶¹

The Sale of the South Porcupine Tract

In May 2012, the BLM awarded the coal reserve at the South Porcupine coal tract to Peabody Energy for a \$1.11per-ton bid for 8905 Btu coal. The \$1.11-per-ton bid was for coal of a higher quality than the earlier bid by Alpha Natural Resources for the Caballo West tract in August 2011. Alpha's bid of \$1.10 per ton was for 8500 Btu coal.

SNL Energy's *Coal Report*¹⁶² commented:

In December 2011, Arch Coal Inc. paid a record \$1.35 per ton for the South Hilight coal tract, which contains coal with a slightly higher heating content than South Porcupine but also a slightly higher sulfur content.

Peabody's South Porcupine bid also looks like a bargain compared to an August 2011 auction in which an Alpha Natural Resources Inc. unit paid \$1.10 per ton for the West Caballo reserve, which contains coal of significantly lesser quality than South Porcupine.

Peabody Energy was the sole bidder on the project.

These five coal-lease sales illustrate the following points:

1. The bid prices reflect a long-term rising price outlook for PRB coal on the part of Peabody Energy, Alpha Natural Resources, and Arch Coal. The market's response to the Cloud Peak sale reflects the same. The outlook is predicated on intensified domestic demand and rising exports.
2. Building reserve capacity in low, medium, and high Btu PRB coal is essential to each company's current share value, revenue-earning potential, and stock value. Locking in new reserve positions is vital for each company's domestic and international market expansion.
3. The BLM's approach to these sales taken cumulatively, send a red flag warning that the agency is unprepared for the market changes taking place. The Cloud Peak price was far

below any measure of fair market value, if the concept is to be reasonably understood. The most recent South Porcupine lease sale lead SNL Energy's *Coal Report* to comment: "looks like a bargain."

4. Commentary at the time of the Cloud Peak sale was that the FMV was adjusted downward by the BLM because of the rising cost of production on the tract. The market, more alert to the rising price environment than BLM, immediately raised the company's stock value. Three months later bids of 97 cents per ton and \$1.10 per ton met the fair market value for lower quality coal. How the prices rose for lower quality coal between 14 percent and 29 percent in a matter of weeks reflects poorly on the FMV method and process.

Furthermore, although the Alpha and Peabody Energy bids reflect historically high prices for PRB coal, the August 2010 Peabody investor presentation shows market headroom pricing of \$36 per ton. Peabody's and Arch's views on the possible premiums achieved through export sales suggest growing and persistent excess cash profits for coal producers from rising international activity. These market measures support much higher valuations¹⁶³ than those attained by the limited competition achieved in the Caballo and Belle Ayr sales.¹⁶⁴

Cloud Peak's bid drove the company stock valuation considerably higher because of its coal producing position (because it is a PRB pure play producer, as no other financial activity was providing crosscurrents to effect its value at the time) and because it was perceived as a sweetheart deal. On price alone, the Cloud Peak sale should have generated a higher per ton value and a higher bonus payment for the U.S. Treasury. Instead, the Treasury lost funds.

The BLM's Record of Decision in each case directly or indirectly materially misrepresents what market the coal will be sold in, where it will be consumed, where its impacts will be experienced, what impact its production will have domestically and internationally on supply and price, and the status of alternative energy supplies. The full purpose for which this coal is being mined is not reflected in the ROD.¹⁶⁵

Finally, each of the five successful bidders detailed here is active in export markets. Current and future share value and corporate strategic decision-making are tied to greater integration of production with global markets. The coal producers do not have as their exclusive intent—if it is their intent any longer at all¹⁶⁶—to provide coal to U.S. domestic utilities at affordable prices.

APPENDIX C: GAO ARCHIVED COAL-LEASE RESEARCH

	Date	Title of Report	Critical Issues Covered in Report
1.	3/9/1972	Improvements Needed in Administration of Federal Coal-Leasing Program	Recommended stronger enforcement of environmental and reclamation requirements, flexibility in ability to adjust royalty lease terms more often, disallowing deferment of coal development on granted leases.
2.	4/28/1975	Further Action Needed on Recommendations for Improving the Administration of Federal Coal-Leasing Program	Reiterated recommendations from 1972 report on the improvements needed in Federal coal-leasing program.
3.	10/15/1975	Federal Coal Leasing Program. Administered by the Department of Interior	Provided data and analysis on coal reserves, regional production and largest mining companies.
4.	3/26/1976	Issues Related to the Development of Federal Coal Resources	DOI has decided to base its leasing policy on the number and value of bids received instead of on advance planning, timing, or estimates of the quantity of coal to be produced. DOI's current leasing program is superior to its previous system, but mapping, drilling, and land management planning weaknesses can jeopardize the success of the entire operation.
5.	4/1/1976	Role of Federal Coal Resources in Meeting National Energy Goals Needs To Be Determined and the Leasing Process Improved	Important quotes: "DOI has decided to lift the moratorium without having reasonable goals of how much coal to lease or when to lease. Recommended stronger enforcement of environmental and reclamation requirements, flexibility in ability to adjust royalty lease terms more often, disallowing deferment of coal development on granted leases." "In the past, DOI gave little attention to adequately valuing coal lands and leased coal."
6.	7/20/1976	Department of Interior's Approval Process for Coal Mining Plan	The audit reviewed policy and procedures used by DOI to approve mine plans. It then applied these standards and protocols to approval of several coal and mining plans.
7.	10/25/1977	United States Coal Development and the Federal Coal Leasing Amendments Act of 1975 - Statement of Monte Canfield, Jr. Director, Energy and Minerals Division Before the Subcommittee on Energy Production and Supply	The success of a federal leasing program revolves around three key points: resource and reserve data, maximizing economic recovery, and coordinating the planning for future leasing and production between the Department of Energy (DOE) and Interior.

8.	12/30/1977	Status of Competition In the Coal Industry	Report explored the companies in the industry.
9.	6/25/1979	Issues Facing the Future of Federal Coal Leasing	GAO report examined questions on new leasing program: how to balance fair market leasing goals with environmental, socioeconomic and economic goals in a less regulated environment.
10.	6/25/1979	Statement of John Sprague, Associate Director, Energy and Minerals Division, before the Subcommittee on Mines and Mining	Testimony. Statement expresses concern regarding Interior's decision to restart competitive leasing before performing analysis of current leases, suggests analyzing ability to meet coal production goals for 1985-1990.
11.	9/20/1979	Statement of John Sprague, Associate Director, Energy and Minerals Division, before the Subcommittee on Mines and Mining	Testimony: Follow up to earlier testimony of 6/25/1979, concerned Interior not taking into account uncertainties when calculating amount of coal production goals.
12.	8/22/1980	A Shortfall in Leasing Coal From Federal Lands: What Effect on National Energy Goals?	Addressed serious problems regarding leasing insufficient amounts of coal, not selecting the best coal areas for lease, and not having needed coal data are indicated in the Department of the Interior's lease sale in the Green River-Hams Fork region of Colorado and Wyoming.
13.	12/12/1980	Mapping Problems May Undermine Plans for New Federal Coal Leasing	GAO reviewed problems associated with the Department of the Interior's coal mapping program as it would affect the future leasing of coal from Federal lands, found that maps that are often inaccurate, unreliable, and inappropriate either to define broad planning boundaries or to support the kinds of economic, energy, and environmental trade-off decisions.
14.	8/6/1981	How Interior Should Handle Congressionally Authorized Federal Coal Lease Exchanges	GAO called into questions Interior's lease exchange for Utah company, didn't meet Congressional requirements for non-competitive lease, and didn't prepare proper equal value determination.
15.	8/20/1981	Simplifying the Federal Coal Management Program	GAO reviewed Interior's regulation governing its coal lease program and commented on ways to streamline provisions related to maximum economic recovery, diligent development, logical mining units and environmental review requests.
16.	4/28/1982	Cooperative Leasing Offers Increased Competition, Revenues, and Production From Federal Coal Leases in Western Checkerboard Lands	GAO evaluated the Department of the Interior's ongoing experiment with cooperative leasing agreements, before meaningful comparisons can be made against other leasing alternatives.

			More experience with the concept is needed.
17.	8/10/1982	Need for Guidance and Controls on Royalty Rate Reductions for Federal Coal Leases	GAO discussed problems encountered by the Department of the Interior in its procedures for granting or denying requests for royalty rate reductions on federal coal leases, found Interior was not sufficiently used its existing accounting and auditing expertise to review reduction applications.
18.	3/7/1983	Coal Exchange Management Continues To Need Attention	GAO examined several aspects of the proposed exchange of coal land ownership in Montana between the Bureau of Land Management (BLM) and a mineral company.
19.	5/11/1983	Analysis of the Powder River Basin Federal Coal Lease Sale: Economic Valuation and Legislative Changes Needed	Review of 1982 sale of 11 coal tracts. GAO review found BLM leased tracts for \$100 million less than fair market value.
20.	5/23/1983	Analysis of the Powder River Basin Federal Coal Lease Sale	Testimony: Specifically discusses competitive leases for land adjacent to mining operations already in place, adoption of entry level bidding (lower minimum acceptable bids) that lowered final bid value. GAO evaluation showed that most of the Powder River coal leases sold for less than fair market value.
21.	9/6/1983	Fair Market Value Policy of Federal Coal Leasing	Testimony: Further discussion regarding Powder River/fair market value, discussed recommended valuation improvements. Recommended quantitative tests for FMV regardless of bidding and greater reliance on arm's length and prior sales.
22.	1/27/1984	Evaluation of Department of the Interior Comments on GAO's Report on the Powder River Basin Coal Sale	GAO presented its evaluation of the Department of the Interior's comments on a GAO report, which analyzed the Powder River Basin federal coal lease sale. GAO emphasized that there is a need to develop the best possible procedures to ensure receipt of fair market value without improper influence by Interior.
23.	6/11/1984	Deficiencies in the Department of the Interior OIG Investigation of the Powder River Basin Coal Lease Sale	GAO reviewed the conduct of a Department of the Interior, Office of the Inspector General (OIG) investigation into the Powder River Basin coal lease sale. GAO found that the three reports were incomplete and unreliable.

24.	8/2/1984	Legislative Changes Are Needed To Authorize Emergency Federal Coal Leasing	GAO recommended changes to Interior's emergency lease procedures, FMV determination flawed because did not assume higher value to emergency applicant.
25.	2/17/1987	Mineral Resources: Interior Has Improved Its Administration of Coal Exchanges	GAO evaluated the Department of the Interior's procedures for administering the trade or exchange of federal coal lands, GAO recommended administering lease exchanges in a way that ensured competition would still exist.
26.	8/25/1987	Mineral Revenues: Coal Lease Readjustment Problems Remedied but Not All Revenue Is Collected	GAO examined BLM's actions regarding readjusting coal leases and collecting royalties, found BLM did not readjust on time, did not collect \$187 million, MMS did not collect royalties because of inadequate financial management.
27.	9/30/87	Mineral Resources: Interior's Actions on Three Coal Leases	GAO reviewed BLM's proposal to suspend a portion of a firm's coal leases for non-performance on diligence standards.
28.	8/4/1992	Mineral Resources: Proposed Revision to Coal Regulations	GAO report critical of BLM proposed rule to allow leaseholders to only produce .3 percent of recoverable coal reserves and still maintain lease. BLM did not explain reasons, did not present evidence this was necessary, and would allow leases to be held without production.
29.	9/16/1994	Mineral Resources: Federal Coal-Leasing Program Needs Strengthening	Congress passed legislation to discourage the speculative holding of federal coal leases and to encourage the development of leased coal. Yet GAO found that the Bureau of Land Management (BLM) has taken actions that do not further these goals.

NOTES

¹ 30 USC Section 201 (a) (1)

² Nelson, Robert, *The Making of Federal Coal Policy*, Duke University Press: Durham, N.C., 1983, p. 14 (hereinafter cited as Nelson).

³ Nelson, p. 20.

⁴ United States Commission on Fair Market Value Policy for Federal Coal Leasing, *Report of the Commission: fair market value policy for federal coal leasing*, (Commission on Fair Market Value Policy for Federal Coal Leasing, 1984,) p. 1 (hereinafter cited as Linowes).

⁵ Nelson, p. 6. The terms included: Rent payments of \$1 per acre from the sixth year onward; Royalties of at least 5 cents per ton; Leases could be renegotiated every twenty years A requirement for diligent development and continued mine operation, or annual advance payments.

⁶ Nelson, p. 25.

⁷ Linowes, p. 491.

⁸ Nelson, p.28.

⁹ Although legally formed in 1946, BLM had no unified legislative mandate until Congress enacted the Federal Land Policy and Management Act of 1976 (FLPMA).

¹⁰ Nelson, p. 45.

¹¹ Nelson, p. 30.

¹² House of Representatives, *Federal Coal Leasing Amendments of 1975 report (to accompany HR 6721)*, House of Representatives, 94-681.

¹³ See: Linowes p. 200. Prior to the 1971 moratorium, royalty payments ranged from 15 to 20 cents per ton.

¹⁴ Nelson, p. 105.

¹⁵ For a discussion of the specific political and policy dilemmas facing Interior at the time and how the final bill and regulations addressed those issues see: James Rasband, James Salzman and Mark Squillace, *Coal Leasing*, Natural Resources Law and Policy, Second Edition, Foundation Press, 2009. 1160-1165.

¹⁶ http://www.blm.gov/wy/st/en/programs/energy/Coal_Resources/PRB_Coal/history_print.html. "History of the coal program", accessed February 12, 2012.

¹⁷ Linowes, p. 2.

¹⁸ Linowes, p. 375.

¹⁹ The debate leading up to the new leasing program centered on coal producers who had leases but were not actively mining the reserves. Holding reserves for speculative purposes was a problem for a number of reasons, but it was also an indication that no new leases were required. The Linowes Commission review concluded that the 1982 coal tract sales were not needed for the purposes of maintaining the supply of coal to the nation's markets, see Linowes, p.133.

²⁰ Linowes, p. 375.

²¹ Linowes, p. 376.

²² Linowes, p. 376.

²³ *A Report to the Committee on Appropriations, U.S. House of Representatives, on the Coal-leasing program of the U.S. Department of the Interior*, prepared by the Surveys and Investigations Staff, House Appropriations Committee (Washington, D.C., April, 1983).

²⁴ United States General Accounting Office, *Analysis of the Powder River Basin Federal Coal Lease Sale: Economic Valuation Improvements and Legislative Changes Needed*, GAO/RCED-83-119, May 11, 1983, (hereinafter referred to as: GAO/RCED-83-119). See also: GAO, *Evaluation of Department of Interior Comments on GAO's Report on the Powder River Basin Coal Sale*, B-201410, January 23, 1984. (hereinafter cited as GAO-Comments).

²⁵ Linowes, p. 491.

²⁶ Three other related investigations by the Department of Interior's Office of Inspector General evaluated the behavior of agency personnel resulting in a referral to the Department of Justice. The subsequent Department of Justice investigation report did not recommend criminal indictment but did cite potential violations of government ethics rules. These reports did not opine on the question of the fair market value.

²⁷ Office of Technology Assessment, United States Congress, *Environmental Protection in the Federal Coal-leasing program*, Washington, D.C.: U.S. Congress, Office of Technology Assessment, OTA-237, May 1984, p. 4.

²⁸ The charges to the GAO as described in GAO/RCED-83-119, p 1.

²⁹ GAO/RCED-83-119, p. iii-iv.

³⁰ GAO/RCED-83-119: Appendix 4 – Table: Calculation of GAO's Revised Estimate of Value for Powder River Basin Leases Offered for Sale on April 28, 1982, p. 87.

³¹ Ibid, p. viii.

³² Ibid, p.viii.

³³ The discussion in GAO/RCED-83-119 and GAO-Comments shed light on the type and level of price adjustments contemplated by the BLM at the time and the market response to those assumptions. Taken together these reports demonstrate the almost arbitrary nature of the pre-auction process within BLM. The GAO's view that a tract designed for one bidder is not competition, nor are the results of the bid usable for fair market value determinations is important. The agency used below FMV methods before 1982, used it for the 1982 sale and then depended on the same coal prices and methods for the next thirty years (see p. 52, GAO/RCED-83-119). For example, on one coal tract BLM originally set the price at 0.29 cents per ton. Due to policy choices and administrative error the tract was actually bid out for 2.50 cents per ton. Coal producer's bid 2.50 cent ton for the parcel – 85 times the level of BLM's appraisal. On another tract the agency rejected an April 1982 bid for \$11 million. In October the same company bid \$22 million on the same tract. Another tract received an appraisal price of 26.8 cents per ton. The BLM reduced the price to 8 cents per ton. The FMV adjustment was 326% from the appraised level. Some of the giveaways are greater than others. Coal producers were not dissuaded from bidding because of high prices. The BLM's pricing was arbitrary and capable of estimating significant market price fluctuations up and down. Market price, per se, because of there being only one bidder was truly in the eyes of the beholder. The GAO argued when it was clear the parcel was only for one company that a completely different market price analysis and price negotiation was necessary (see discussion on pages 59-60 of RCED-83-119).

³⁴ Linowes, p.1.

³⁵ The period of the 1970s was a period of robust policy debate on the program and policy issues surrounding the coal-leasing program. This was, at a time when very little coal was actually being mined compared to 2012 production levels. Report to the Federal Trade Commission on Federal Energy Land Policy, *Efficiency, Revenue and Competition*, (Washington DC, Senate Committee On Interior and Insular Affairs, 94th Congress, 2d., Session, 1976; Council on Economic Priorities, *Leased and Lost: A Study of Public and Indian Coal Leasing in the West*, New York CEP, 1974; Katherine Fletcher, Ed. *A Scientific and Policy Review of the Draft Environmental Impact Statement for the Proposed Federal Coal-leasing program of the Bureau of Land Management, Department of Interior*, The Institute of Ecology, Environmental Impact Assessment Project, 1974; Congress of the United States, Office of Technology Assessment, *Management of Fuel and Non Fuel Minerals in Federal Lands: Current Status and Issues*, Washington, D.C.: OTA, Apr., 1979; General Accounting Office, *Role of Federal Coal Resources in Meeting National Energy Goals Needs to be Determined and the Leasing Process Improved*, Washington, D.C.: GAO, 1976; Leasing Policy Development Office, U.S. Department of Energy, *Federal Coal Leasing and 1985 and 1990 Regional Coal Production Forecasts*, Washington, S.C., DOE, June 1978; William Watson and Richard Bernkopf, *Economic Analysis of Maximum Economic Recovery of Federal Coal*, Washington, D.C.: Program Analysis Office, U.S. Geological Survey, Department of Interior, May 29, 1979, United States General Accounting Office, *Issues Facing the future of federal coal leasing*, report to Congress, EMD79-47, June 25, 1979.

³⁶ Linowes, p. 388-389.

³⁷ See discussion of competition and the specific dynamics of the eleven coal tracts: GAO/RCED-83-119.49-56.

³⁸ According to BLM's website, of the 25 leases posted since 1991 to the present only four have had two bidders, all others have had only one bid. The four lease sales with two bidders were Thundercloud (1998), West Roundup (2005), Caballo West (2011) and Belle Ayr (2011). For example, the Organization for Economic Cooperation and Development (OECD) publishes a guide to bid-rigging in public procurements. Its principal red-flag warning of a defective procurement scheme is a "small number of bidders – the possibility of bid rigging is higher if there are few bidders." OECD, *Detecting Bid Rigging in Public Procurements*, <http://www.oecd.org/dataoecd/36/38/42594486.pdf>, p.7.

³⁹ See discussion on the Alpha Natural Resources and Peabody bidding in *Appendix B*. Even limited competition is unlikely to be an adequate check on BLM's fair market value process in the current environment.

⁴⁰ The Inspector General's investigations of the leaks that occurred during the bid process were subjected to criticism by the Linowes Commission and were the subject of a highly critical United States General Accounting Office study. United States General Accounting Office, *Deficiencies in the Department of Interior OIG Investigation of the Powder River Basin Coal Lease Sale*, GAO/RCED, 84-167, June 11, 1987.

⁴¹ GAO-Comments.

⁴² GAO, *Mineral Resources: Federal Coal Lease Program Needs Strengthening*, GAO RCED-94-10, September 1994 (hereinafter referred to as: GAO/RCED-94-10), p. 53.

⁴³ In response to GAO/RCED-94-10 Interior officials wrote a 12-page line-by-line response. They did not object to GAO's assertions that it was the 1982 flooding of the market with low cost coal that created a downward pricing spiral. In fact the DOI response was an overall robust defense of low priced coal and its benefits to the US economy. See Appendix VII of the audit page 87. In a very real sense the agency had changed its position over a ten year period from one of a more technical defense of the appraisal process to one where it was declaring that the decision was sound policy and had a desirable impact on the U.S. economy.

⁴⁴ See: Rasband, Salzman and Squillace, *Op Cit*. Like many of the issues addressed in this paper each of the areas discussed in this section could benefit from far greater elaboration. As noted throughout this report there is very limited discussion of the contemporary status on these issues. Little has been published of a public policy or academic nature in the last thirty years. By necessity, many complex issues are treated in a shortened version and the reader is encouraged to pursue the studies listed in these endnotes.

⁴⁵ United States Department of Interior, Bureau of Land Management, *Economic Evaluation of Coal Properties*, Release 3-285, April 7, 1994, p. 1-4, (BLM-Handbook). Prior to the 1970s the Department did not conduct much diligence on coal valuations. The scandal heightened the issue for the Department at the time.

⁴⁶ See: Title 43, Subtitle D, Chapter 11 Subchapter C, Part 3425.1-5, which grants BLM the authority to contract outside coal zones. This provision of law, along with the emergency lease provisions (Part 3425.1-4), establish the two contracting exceptions to the norm. Part 3425.0-2 makes clear these contracting methods are for narrowly tailored circumstances.

⁴⁷ James Rasband, James Salzman and Mark Squillace, *Coal Leasing*, Natural Resources Law and Policy, Second Edition, Foundation Press, 2009. 1160-1165.

⁴⁸ In response to Congressman Markey's request for an audit of BLM's coal-leasing program the agency used as its defense against the audit that it is governed by the handbook. See: Henry Clay Webster, *Federal coal leasing review sought by BLM*, *Platts' Coal Trader*, April 26, 2012.

⁴⁹ GAO/RCED-83-119, p. 18. This is the same handbook that calls for external review and promises to release appraisal documents to the public after leases are issued.

⁵⁰ Nelson, p. 235. Nelson's discussion throughout his study, published in 1983, highlights a strong tendency within DOI to oppose any form of governmental planning in the coal production process.

⁵¹ http://www.blm.gov/wy/st/en/programs/energy/Coal_Resources/PRB_Coal/history.print.html

⁵² These design boundaries are routinely drawn (gamed) by coal producers and accepted by BLM to prevent competition. One coal consultant explains it this way: "As a practical matter, most companies will attempt to define LBA tracts that, because of location or geometry, are of interest only to the nominating company. This minimizes competitive bidding on the tract, and may result in a lower cost lease." JT Boyd Company, Mining and Global Consultants, *Powder River Basin Coal Resource and Cost Study*, Report 3155.001, September 2011. In the Matter of Application of Public Service Company of Colorado for Approval of Its 2011 Electric Resource Plan, Docket: 11A-869, Attachment: LWG 1-3.A1.

⁵³ RCED/GAO 94-10, p. 20.

⁵⁴ These leases include approximately 19,172 acres and 5.793 billion tons of mineable coal. Eighteen of these leases were issued to the following producing mines for the purpose of extending operations at those mines: Jacobs (2), Black Thunder (3), North Antelope Rochelle (4), Eagle Butte (2), Antelope (3), Buckskin (1), Cordero/Rojo (2), and the former North Rochelle (10). The remaining two leases, the West Rocky Butte and the West Roundup, were issued to companies intending to open new mines. The West Rocky Butte lease was issued to Northwestern Resources Company in 1992. That company planned to start a new mine to recover the coal included in the Rocky Butte and West Rocky Butte leases but the new mine was never developed. The Rocky Butte and West Rocky Butte leases are now held by Caballo Coal Company, a

subsidiary of PEC, and are included in the Caballo Mine. The West Roundup lease was issued to West Roundup Resources, Inc., a subsidiary of PEC, and has been incorporated into the recently permitted School Creek Mine. Source: US Department of Interior Bureau of Land Management Record of Decision, West Coal Creek Lease Application, WY 172585, Campbell, Wyoming, June 11, 2011, p. 3-4

⁵⁵ WildEarth Guardians v. Sierra Club and Defenders of Wildlife v. Salazar, Secretary of Department of Interior, United States District Court for the District of Columbia, Civ. No.1:11-CV-00670-CKK.

⁵⁶ United States Department of the Treasury, *Receipts to Treasury*, May 20, 2009.

⁵⁷ Office of the Inspector General, *Abandoned Mines in the Department of Interior*, C-IN-MOA-0004-2007, July 1, 2008.

⁵⁸ Office of Inspector General, *Management of Land Boundaries*, C-IN-MOA-0001-2009

⁵⁹ For example, BLM's 2012 Budget Justification states: "No significant change is projected for the coal-leasing program through 2013. A process is being developed in Wyoming to approve multiple leases at the same time but this effort is being offset by lower market demands and mergers." The same budget presentation projects a decline of acres under management during 2010-2012 periods. Bureau of Land Management, *Budget Justification and Performance Information Fiscal Year 2011*, Coal Management Performance Overview, Section IV, p.135-

⁶⁰ For a listing of those reports found on the General Accounting Office website see: Appendix C: *GAO Archived Coal Lease Research*.

⁶¹ GAO/RCED-83-119.

⁶² GAO continues to audit DOI and BLM activity regularly. For example, GAO has released audits on the need for BLM to improve its oversight of gas and oil leases. GAO, *Past Work Offers Insights to Consider in Restructuring Interior's Oversight*, GAO-0-888T, July 22, 2010 as well as point out major management challenges on revenue collections on these leases. GAO, Department of Interior: Major Management Challenges, GAO-11-424T, March 1, 2011. GAO has also audited DOI's overall appraisal operations including BLM's land appraisal operations that do not include coal appraisals. GAO, *Actions Needed to Improve Compliance with Appraisal Standards, Increase Efficiency and Broader Oversight*, GAO-06-1050, September 29, 2006.

⁶³ GAO, *GAO: Serving the Congress and the Nation: 2010-2015*, August 16, 2010, www.gao.gov/htext/910559.html

⁶⁴ Letter from: Representative Edward Markey, House Committee on Natural Resources to Gene Dodaro, Comptroller General, U.S. Government Accountability Office, April 24, 2012.

⁶⁵ Henry Clay Webster, *Federal Coal leasing review at BLM, Platts' Coal Trader*, April 25, 2012.

⁶⁶ BLM-Handbook, p. V-5.

⁶⁷ Letter from Donald Shapiro, State Director, Bureau of Land Management, Wyoming State Office to Shannon Anderson, Powder River Basin Council, April 12, 2011. See also: Donald Simpson, State Director, Bureau of Land Management, Wyoming State Office to Jeremy Nichols, WildEarth Guardians, August 2011 in relation to the ten lease requests.

⁶⁸ 30 USC Section 201 (a) (1)

⁶⁹ BLM-Handbook, p. I-2:3 – A discussion of DOI's various operational interpretations of FMV as applied to the 1982 coal tracts and the underlying policy issues can be found in GAO-RCED 83-119 and DOI's subsequent response (GAO-B-208410). The agency has not publicly provided such a detailed review of its policy considerations for FMV and how they relate to the changing nature of coal markets since.

⁷⁰ *Ibid*, p. 1-3.

⁷¹ *Ibid*.

⁷² http://www.blm.gov/wy/st/en/programs/energy/Coal_Resources/coalfaqs/critical_concepts.html

⁷³ BLM-Handbook. The following is a summary of several sections of detailed methodological guidance provided to agency staff in the handbook. This discussion is for illustration purposes and does not intend to be exhaustive in capturing the complexity of the coal tract appraisal process.

⁷⁴ Typically, BLM is entering into 20 year lease agreements.

⁷⁵ BLM-Handbook, p. III-14.

⁷⁶ http://www.blm.gov/wo/ct/en/prog/energy/con/md_non-energy.html

⁷⁷ BLM-Handbook, p.II-3. The Data Requirements section of the Handbook stresses a meticulous concern for documentation consistent with the standards set out by the Commission and set forth in the introduction.

⁷⁸ BLM-Handbook, *Determining Revenues*, p. III-16.

⁷⁹ GAO, *Issues Facing the Future of Coal Leasing*, EMD-TRI-47, June 25, 1978.

⁸¹ A significant determinant in price setting in a monopoly situation is the terms and conditions imposed on the transaction by the monopoly owner. By effectively deploying the asset to coal producers on the current terms and conditions, the monopoly owner, the United States government, has for its own reasons also deployed considerable value that might otherwise be captured through a rigorous application of a fair market value methodology. There are alternative ways of presenting the value of PRB coal. The WMA study and Peabody's investor presentation are others. More analytical work needs to be done. The lack of a robust literature is part of the problem outlined in this paper and encountered in its preparation.

⁸² Christina A. Morrow, Vice President Investor Relations, *Jefferies 6th Annual Global Industrial A&D Conference*, August 10, 2010, Slide 23.

⁸³ Actual coal price assumptions used in the 1982 DOI appraisals are not fully disclosed in the GAO audit or the Linowes Commission report. The importance of the coal price assumption used in a fair market valuation cannot be overstated. It is a critical policy issue addressed in a 1979 GAO audit: United States General Accounting Office, *Issues Facing the Future of Coal Leasing*, EMD-79-47, June 25, 1979. Each appraisal has an embedded coal outlook in its calculation.

⁸⁴ When applying the 249% adjustment to the price of coal in the 1983-1988 period the impact on PRB coal prices is somewhat high (in excess of \$30.00 per ton). Two of the coal tracts in the 1982 sale were estimated with coal prices in excess of \$25.00 per ton. The lower coal price scenario used in this paper is higher than BLM's 1982 lowest price estimate and lower than its highest price estimate. See: GAO/RCED, 83-119, p. 22. Had there been no strong price signals sent by BLM and markets continued apace all coal prices in the country were expected to rise. See: Charles Komanoff, *Power Plant Costs Escalation: Nuclear and Coal Capital lost, Regulation and Economics*, New York: Van Nostrand-Rheinhold Company, 1981, p. 257 (hereinafter referred to as Komanoff). Prices were expected to rise in the post-1982 period, though not as precipitously as the 1970's, a period dominated by international oil price shocks. "Coal is expected to meet increased energy demand and to replace other traditional sources of energy that are increasing in price more rapidly than coal throughout the projection period." United States Energy

Information Administration, *1983 Annual Energy Outlook with Projections through 1995*, May, 1984, p. 109. The lower range scenario in the model used in this paper reduces the 1983-1988 coal prices from the 249 percent upward adjustment by 30 percent. For a full discussion of the economic and energy contexts see Chapters 4, 5 and 6 of EIA's 1983 Energy Outlook.

⁸⁵ All of the estimated losses from BLM's fair market leasing activity are calculated in 2011 constant dollars.

⁸⁶ All values from company profiles Financial Statistics, Yahoo Finance, March 18, 2012.

⁸⁷ Greg Boyce, CEO Peabody Energy, *Energy for the World One BTU at a time*, Barclay's CEO Energy/Power Conference, September 8, 2011. p. 8.

⁸⁸ Among the factors influencing market behavior environmental regulation, low natural gas prices, utilities switching coal suppliers, coal plant retirements, diminished public support and the reaction of state public service commission regulators.

⁸⁹ The Energy Information Administration, *U.S. Domestic and Foreign Coal Distribution by State of Origin, 2010* shows that Montana and Wyoming exported 6.6 million of 479 million tons produced in 2010, or 1.3%.

⁹⁰ One estimate places the export goal of the coal industry at 100 million tons per year from the PRB. See: Richard K. Morse and Lars Schernikau, *Asia's changing landscape*, World Coal, Volume 20, Number 10, October 2011, p.20. A recent study by Wood Mackenzie, reported on by SNL Energy's *Coal Report Daily*, but not publicly available, places overall US export potential at 500 million tons by 2030, suggesting even higher levels of export from the PRB. See: Dan Lowrey, *Woodmac sees half of U.S. Coal production exported by 2030*, SNL Energy's *Coal Report*, March 17, 2012.

⁹¹ Cloud Peak Energy, *2010 Form 10K*, March 2, 2011, p.108. (Cloud-Peak, 2010 10K)

⁹² Arch Coal, Inc., *Arch Coal announces agreement with Canada's Ridley Terminal for Pacific Coast Exports*, January 18, 2011.

⁹³ Rick Navarre, President and Chief Commercial Officer, *Expanding Markets and Productivity Growth Opportunities*, 2010 Analyst and Investor Forums, June 17, 2010, Slide 42. Hereafter: (Peabody-Navarre) specifically addresses Peabody's view of potential for PRB sales in the Asia Pacific markets: South Korea, Japan, Hong Kong, China and India (an estimated market of between 140 and 260 million tons per year). Slides 20, 30, 37 provides information on nature of many of the larger individual markets.

⁹⁴ Deck Slone, Arch Coal, *Raymond James 3rd Annual Coal Investors Conference*, November 11, 2010, Slide 12.

⁹⁵ Arch Coal, *Arch Coal Establishes Asia-Pacific Subsidiary*, May 9, 2011

⁹⁶ Peter Gartrell, *Arch CEO sees \$20 range for PRB coal to Asia*, *Platts' Coal Trader*, January 31, 2011.

⁹⁷ Arch Coal, *Arch Coal Acquires Equity Interest in West Coast Terminal*, January 12, 2011 and *Arch Coal Announces Agreement with Canada's Ridley Terminal for Pacific Coast Exports*, January 18, 2011.

⁹⁸ Arch Coal, *Arch Coal Secures State-Controlled Otter Creek Coal Reserves in Montana*, March 18, 2010.

⁹⁹ Barry Cassell, *Alpha looks to Gulf Coast for coal export opportunities*, SNL Energy's *Coal Report*, June 21, 2011.

¹⁰⁰ Cloud Peak Energy, *Cloud Peak Agrees to Terms for Terminal Capacity (Westshore Terminal Canada)*, June 14, 2011.

¹⁰¹ Cloud Peak Energy, *Second Quarter Investor Presentation*, Slides 14 and 15, August 2011.

¹⁰² Cloud Peak Energy, 2011 Form 10K.

¹⁰³ United States Geological Society, *Assessment of Coal Geology, Resources and Reserves in the Gillette Coalfield, Powder River Basin, Wyoming*, Open-File Report: 2008-1202. <http://pubs.usgs.gov/of/2008/1202>. (USGS-Gillette)

¹⁰⁴ From an audit perspective this sample is statistically significant because it comprises such a sizable portion of the nation's coal supply. The sample size is also highly relevant since the area surveyed will be the leading source of the nation's coal supply for at least the next two decades.

¹⁰⁵ Rebecca Smith, U.S. *Foresees A Thinner Cushion of Coal*, *Wall Street Journal*, June 8, 2009.

¹⁰⁶ All reserve information in this chart are cumulative totals of the assigned and unassigned tonnage provided by the PRB coal producers in their 10K's, or in the case of the newly merged Alpha and Massey company in the investor presentation announcing the merger.

¹⁰⁷ US Department of Interior Bureau of Land Management Record of Decision, West Coal Creek Lease Application, WY 172585, Campbell, Wyoming, June 11, 2011.

¹⁰⁸ Peabody Energy, *2010 Form 10 K*, Assigned and Unassigned Reserves, February 28, 2011.29-30.

¹⁰⁹ Arch Coal, *2010 Form 10K*, Assigned and Unassigned Reserves, March 1, 2011, p. 41.

¹¹⁰ Alpha Natural Resources, *Creating an Industry Leader: Alpha Natural Resources/Massey Energy*, January 31, 2011, Page 5.

¹¹¹ Alpha Natural Resources, *2010 Form 10K*, February 25, 2010, p. 48.

¹¹² Cloud Peak Energy, *2010 Form 10K*, p.10

¹¹³ United States Geological Survey, *Production and Depletion of Appalachian and Illinois Basin Coal Reserves*, The National Coal Resource Assessment Overview, U.S. Geological Survey Professional Paper, 1625-FF for a discussion of the history of mining in the area and depletion see: "USGS-CAPP/ILB"

¹¹⁴ Rick Navarre, President and Chief Commercial Officer, *Expanding Markets and Productivity Growth Opportunities*, 2010 Analyst and Investor Forums, June 17, 2010, Slide 40. Hereafter: (Peabody-Navarre).

¹¹⁵ Energy Information Agency, *Annual Energy Outlook 2011 with Projections through 2035*, April 2011, p. 86.

¹¹⁶ See: Coal and Energy Price Report, *Market Commentary*, March 19 and 30, 2010 for coverage of Santee Cooper's coal deal for ILB coal and indications from Progress Energy, Duke and Southern Company's declining interest in CAPP coal. See: *American Electric Power: American Electric Power Seeks Bids for Coal*, Trading Markets.com, March 23, 2010. For a more data driven discussion of the trend, see: Michael Niven and Jesse Gilbert, *Subbituminous coal deliveries eclipse bituminous deliveries in March*, SNL Energy's *Coal Report*, July 20, 2011.

¹¹⁷ Susan Tierney, *Why Coal Plants Retire: Power Market Fundamentals of 2012*, Analysis Group, Inc., February 16, 2012.

¹¹⁸ One model designed by SNL Energy's *Coal Report* monitors the coal-to-gas switching potential and updates it. See: Jesse Gilbert and Steve Piper, *Prospects for Coal to Natural Gas Switching in the Second Half of 2011*, SNL Energy's *Coal Report*, 2011. A recent update: Jesse Gilbert, *Coal-to-gas switching: It's all in the price*, SNL Energy's *Coal Report*, March 7, 2012.

¹¹⁹ Michael Niven and Jesse Gilbert, *Subbituminous coal deliveries eclipse bituminous deliveries in March*, SNL Energy's *Coal Report*, July 20, 2011.

¹²⁰ BLM recently reoffered the South Porcupine coal tract after an initial offering failed to produce a bid that met the fair market value. Dan Lowrey, *BLM schedules May lease sale for South Porcupine coal tract in Wyoming*, SNL Energy's *Coal Report*, April 14, 2012

¹²¹ Dan Lowrey, *Update: Peabody secures huge coal tract for North Antelope min in PRB*, May 18, 2012.

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- ¹²² Nelson, p 5
- ¹²³ Nelson, p 6.
- ¹²⁴ Department of Interior, Federal Coal Management Program, *Final Report and Recommendation for the Secretary on Fair Market Value and Minimum Acceptable Value Bids for Federal Coal Leasing*, December 1979, pp. 1-2.
- ¹²⁵ *Ibid.*
- ¹²⁶ GAO/RCED-94-10, p.87.
- ¹²⁷ It is noteworthy that BLM finally rejected a bid of a major coal producer, Peabody, at the South Porcupine site. This was after the May 2011 stories on Cloud Peak and subsequent market response showed the sweetheart nature of the deal, after higher bids for cheaper coal from other companies in subsequent bids and after litigants in the decertification case challenged BLM's longstanding practice of giving away coal for below fair market value (see: *WildEarth Guardians v. Salazar*, Secretary of Department of Interior, United States District Court for the District of Columbia, Civ. No.1:11-CV-00670-CKK).
- ¹²⁸ Daniel Yergin, *The Quest*, New York: Penguin Books, p. 400.
- ¹²⁹ See Thomas Friedman, *Hot, Flat and Crowded*, New York: Farrar, Strauss and Grioux, 2008.
- ¹³⁰ The 1983 EIA Outlook projected increasing PRB coal prices and increased PRB production during the 1983 to 1995 period, p. 109.
- ¹³¹ For yet another way to understand this point see: Bernstein Commodities and Power, *No Light for Dark Spreads: How the Ruinous Economics of Coal-Fired Power Plants Affect the Markets for Coal and Gas*, February 18, 2011. The study demonstrates that CAPP pricing in a time of declining natural gas prices and lower power prices is uncompetitive. The findings of the paper on PRB coal, for the most part, continue to document the PRB coal price advantage.
- ¹³² A 1981 study of comparative costs of coal and nuclear energy generation contained a forty-year forward-looking coal price forecast. The estimate, driven in large part by the 1974-1979 periods, projected a 2.3% annual increase in the price of coal in real terms. The author of the study viewed the 1970's price hikes as anomalous, but provided a rising price future for coal prices that was conservative. The study also demonstrates how even with this rising price scenario (and during a period of rising construction costs) coal still proved to be the most affordable alternative. This is essentially the same market viewed by BLM appraisers in the 1982 sale and the GAO auditors in the subsequent audit. Komanoff, p.257.
- ¹³³ Daniel Yergin, *The Quest*, New York: Penguin Books, p. 400.
- ¹³⁴ Synapse Energy Economics, *Phasing Out Federal Subsidies for Coal*, April 13, 2010.
- ¹³⁵ One usually unnoticed area of coal market subsidy and support is the United States Department of Agriculture Rural Utility Service. For seventy years, until February 2008, the agency supplied low interest capital subsidies to the nation's network of rural cooperatives. In February 2008 the USDA initiated a moratorium on future loans for new construction of coal fired power plants. USDA was and is a major support for coal plant development in the nation. This support for coal plants (and nuclear) included several billion dollars in federal loan losses for bad nuclear and coal deals during the 1990's. See: GAO/RCED, *Rural Development: Financial Conditions of the Rural Utilities Service's Loan Portfolio*, April 1997 and additional GAO Testimony (GAO/RCED-97-198, July 1997) and (GAO/T-AIMD-98-123, March 30, 1998).
- ¹³⁶ GAO-RCED-83-119, p. 39.
- ¹³⁷ GAO-RCED-83-119, p. 61.
- ¹³⁸ GAO-Comments, p.7.
- ¹³⁹ The GAO describes the original process in GAO-RCED-83-119, p. 60 and adds this case for emphasis in GAO-Comments, p. 7.
- ¹⁴⁰ See GAO-RCED-83-119, p. 52.
- ¹⁴¹ GAO-RCED, 83-119, p.70.
- ¹⁴² Moody's has recently projected that coal's share of electric generation will settle out at about 30%. In this authors view this is occurring at a time when the market price of power would suggest even greater losses. See: Dan Testa, *Moody's: In US energy mix, displacement of coal by gas is permanent*, SNL Energy's Coal Report, June 7, 2012.
- ¹⁴³ Michael Niven, *Survey: Utility sector confidence in future of coal is plummeting*, SNL Energy's Coal Report, June 4, 2012.
- ¹⁴⁴ Abby Gruen, *Public power sector facing rocky transition to gas-fired generation*, SNL Energy Coal Daily Report, June 8, 2012.
- ¹⁴⁵ Kathleen Hart, *Duke CEO warns against 'all gas, all the time' for electric generation*, SNL Energy's Coal Report, April 11, 2012; Michael Niven, *Study: Retrofitted coal plants in tough position against cheap gas*, SNL Energy's Coal Report, April 12, 2012; Frank Maisano, *Solyndra mess undermines green jobs message*, SNL Energy's Coal Report Blogs, September 21, 2011.
- ¹⁴⁶ The largest new coal plant in the country Prairie State is nearing completion. Although it originally promised to provide low cost power to communities in five states in the Midwest it is unlikely the plant will ever produce power below the price of market power. See: Dan Gearino, *Cities on hook for power plants costs*, Columbus Dispatch, June 9, 2012. Moody's recent coverage of the public power sector highlighted this concern of those entities with new coal plants, including Prairie State. See: Abby Gruen, *Public power sector facing rocky transition to gas-fired generation*, SNL Energy Coal Daily Report, June 8, 2012.
- ¹⁴⁷ BLM, *Antelope Coal Submits its Successful Bid at Lease Sale*, May 11, 2011. Barry Cassell, *Cloud Peak wins federal PRB coal reserve with bid of 85 cents/ton*, May 12, 2011 and Peter Gartrell, *Cloud Peak Energy's \$297 million bid for PRB coal tract*, Platts' Coal Trader, May 12, 2011. The company was awarded the South Antelope tract at the June 15th auction: Barry Cassell, *Cloud Peak Energy wins 2nd Antelope Coal tract*, June 16, 2011. See also: Barry Cassell, *BLM Schedules Cloud Peak Lease Sale: Will Peabody also bid*, SNL Energy's Coal Report, March 1, 2012.
- ¹⁴⁸ Cloud Peak, *Investor Presentation*, August 2011, p. 37.
- ¹⁴⁹ Peter Gartrell, *BLM Approves Cloud Peak Energy's \$297 Million Bid for PRB Coal Tract*, Platts' Coal Trader, May 12, 2011.
- ¹⁵⁰ Peter Gartrell, *Cloud Peak tract price may reflect higher mining costs, weak market*, Platts' Coal Trader, May 16, 2011.
- ¹⁵¹ Amy Poszywak, *Thursday's Energy Stocks: Cloud Peak up after winning coal tract bid*, SNL Energy's Coal Report, May 12, 2011.
- ¹⁵² Cloud Peak Energy, *Investor Presentation*, Second Quarter 2011, Spring Creek Export Quality Advantage, August 2011, p. 12.
- ¹⁵³ Peabody Energy, *Peabody Energy named winning bidder for 220 million tons of Powder River Basin Coal Resources*, July 13, 2011. Barry Cassell, *Peabody Elbows Alpha Natural Resources aside to grab PRB reserves*, SNL Energy's Coal Report, July 14, 2011.
- ¹⁵⁴ See Barry Cassell, *Following failed coal bid, what is in store for Alpha Belle Ayr mine?*, SNL Energy's Coal Report, July 14, 2011 and Peabody looks at more PRB production for School Creek, Caballo, SNL Energy's Coal Report, July 19, 2011.
- ¹⁵⁵ Barry Cassell, *Peabody looks at more PRB production from School Creek, Caballo*, SNL Energy's Coal Report, July 19, 2011

¹⁵⁶ Bureau of Land Management, *BLM Caballo West Coal Lease Sale Winning Bid Over \$143 Million*, August 13, 2011.

¹⁵⁷ Barry Cassell, *BLM accepts Alpha's record bid for PRB coal reserve tract*, SNL Energy's *Coal Report*, August 18, 2011 and Henry Clay Webster, *Alpha Natural Records win LBA sought by Peabody*, *Platts' Coal Trader*, August 18, 2011.

¹⁵⁸ Webster, *Platts' Coal Trader*, *Record Setting Bid*.

¹⁵⁹ Cassell, SNL Energy's *Coal Report*, *BLM Accepts Alpha Bid*.

¹⁶⁰ Dan Lowrey, *Update: Arch wins South Hilight Coal tract in PRB with \$300M bid*, SNL Energy's *Coal Report*, December 15, 2011

¹⁶¹ Bureau of Land Management, *Record of Decision Environmental Statement for the South Hilight Field Coal Lease Application*, WYW 174596.

¹⁶² Dan Lowrey, *Update: Peabody secures huge coal tract for North Antelope mine in PRB*, *Platts' Coal Trader*, May 18, 2012.

¹⁶³ The model used for this study supports a value for the Cloud Peak leases at North and South Antelope leases of \$866 million; for Peabody, Belle Ayr of \$525 million; and for Alpha Natural Resources Caballo at \$356 million. This is a difference of \$1 billion with the actual amount granted by BLM. BLM's failure to disclose details of the sales requires market proxies to be established to make these estimates. We use the 1982 market variance established by the GAO.

¹⁶⁴ One long-time coal scholar Professor Mark Squillace, University of Colorado makes a similar observation about the limited validity of the competitive price received from the Caballo sale given the fact of two bidders. BLM staff, however, saw the two bidders as clear evidence of an effective program and a competitive market. Peter Gartrell, *Peabody Energy outbids Alpha to win PRB coal tract with \$210.6 million bid*, *Platts' Coal Trader* *Coal Trader*, July 14, 2011. Two bidders for a coal tract in a robust, emerging global market should not satisfy a competitive standard. (See: OECD-Bid Rigging).

¹⁶⁵ For a more detailed review of the flaws in the Records of Decision by this author see: Declaration of Tom Sanzillo, WildEarth Guardians, Defenders of Wildlife and Sierra Club v. Ken Salazar, U.S. Department of Interior and Robert V. Abbey, Director, U.S. Bureau of Land Management and State of Wyoming and Natural Mining Association and Wyoming Mining Association, Civ. No. 1:11-cv-00670-CKK, paragraphs 66-74.

¹⁶⁶ Henry Clay Webster, *Arch Coal Shifts to export strategy in new document*, *Platts' Energy Outlook* *Coal Outlook*, May 28, 2012.