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Donald J. Bieniewicz

Robert H. Nelson

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Donald J. Bieniewicz and Robert H. Nelson\*

# Planning a Market for Federal Coal Leasing

The federal government owns 60 percent of the coal in the United States west of the Mississippi River. Furthermore, federal and nonfederal coal are often so intermingled in railroad checkerboard and many other areas that they must be developed jointly. As a result, the federal government also controls indirectly another 20 percent of western coal development. Although western coal represented only a small part of total U.S. coal production until recently, its share climbed rapidly in the 1970s, reaching 30 percent of U.S. production in 1981. Federal coal production—almost all in the West—has grown correspondingly: in Fiscal 1982, it equaled 104 million tons, 13 percent of U.S. production.<sup>1</sup>

Prior to the 1970s, little attention was paid to western coal. But as it became apparent that western coal would soon be supplying a major share of U.S. coal output, a fierce battle erupted for control over its development. Several major lawsuits—one of which reached the Supreme Court—were filed by environmental organizations opposing federal coal development or seeking major changes in its management. Indeed, the stalemate in federal coal policy proved so difficult to resolve that most federal leasing was effectively suspended from May 1971 to January 1981. While many policy issues were debated during this period, the greatest controversy concerned the appropriate role of market forces in shaping the development of federal coal resources.<sup>2</sup>

## *A Market Solution*

In the private coal market, the pressures of competition tend to promote development of lower cost deposits ahead of higher cost deposits.<sup>3</sup> Despite

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\*The authors are members of the Economics Staff, Office of Policy Analysis, U.S. Department of the Interior. The Interior Department does not necessarily agree with the analysis or conclusions of this paper.

1. For basic federal coal information, see U.S. DEP'T OF INTERIOR, FINAL ENVIRONMENTAL STATEMENT, FEDERAL COAL MANAGEMENT PROGRAM (Apr. 1979), and the subsequent annual FEDERAL COAL MANAGEMENT REPORTS. See also OFFICE OF TECHNOLOGY ASSESSMENT, AN ASSESSMENT OF DEVELOPMENT AND PRODUCTION POTENTIAL OF FEDERAL COAL LEASES (Dec. 1981).

2. For an analysis of the federal coal program during the 1970s, see R. H., NELSON, THE MAKING OF FEDERAL COAL POLICY (Duke University Press, forthcoming 1983).

3. The coal market is generally considered to be highly competitive. See OFFICE OF COMPETITION, U.S. DEP'T OF ENERGY, COAL COMPETITION PROSPECTS FOR THE 1980'S (1981); and ANTITRUST DIVISION, U.S. DEP'T OF JUSTICE, COMPETITION IN THE COAL INDUSTRY (Nov. 1980).

considerable popular belief to the contrary, market forces in the form of speculation also act to promote conservation of resources for the future. Speculation might aptly be characterized as "private conservation;" it provides a mechanism whereby future generations can pay current resource owners to conserve the resource.<sup>4</sup> Market processes also tend to put each coal deposit in the hands of the particular producer who values it most highly and can use it most efficiently. Competition among users of coal would similarly ensure that the output of a particular deposit is most likely to be purchased by the utility (or other user) which values it most highly. Total national resources employed in coal production are then determined by the competitiveness of coal in the market compared with other energy resources (or conservation alternatives).

Until 1971, the federal government leased coal with few controls to any private party requesting the coal. Partly for lack of federal attention, the location and pace of development of federal coal was left to private initiative and the pressures of the marketplace. However, this *de facto* system—it was never explicitly adopted—could not survive the environmental challenges of the 1970s. Moreover, it was incompatible in many ways with the statutory authority under which federal leasing took place.

Critics of federal leasing rightly claimed that the market did not take account of many external impacts of coal development. In legislative and administrative actions in the 1970s, the federal government tried to respond by adopting various regulatory measures to protect the environment.<sup>5</sup> The most important was the enactment in 1977 of the Surface Mining Control and Reclamation Act.<sup>6</sup> In another important step, the Interior Department in 1979 established twenty "unsuitability criteria" which specified circumstances in which federal leasing would not be permitted for environmental reasons.<sup>7</sup>

However, these actions by no means satisfied all the objections to a market solution. Large scale coal development is highly disruptive to the social environment and generally threatens people in the area with a loss of control over their lives. Such forces create strong demands for greater insulation from change, primarily by means of government control and planning of coal development.<sup>8</sup> While such control could in theory be

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4. For further discussion of the role of speculation, see R. L. GORDON, *FEDERAL COAL LEASING POLICY: COMPETITION IN THE ENERGY INDUSTRIES* 8-12 (American Enterprise Institute 1981).

5. For an in depth review of recent public lands policy, see R. H. Nelson, *The Public Lands*, in *CURRENT ISSUES IN NATURAL RESOURCE POLICY* (P. R. Portney ed. 1982).

6. Surface Mining Control and Reclamation Act of 1977, 30 U.S.C. §§ 1201-1328 (Supp. II 1978).

7. The unsuitability criteria are currently embodied in the regulations which govern the federal coal management program at 43 C.F.R. § 3461.1 (1982).

8. See COUNCIL ON ECONOMIC PRIORITIES, *LEASED AND LOST: A STUDY OF PUBLIC AND INDIAN COAL LEASING IN THE WEST* 20 (1974).

exercised by regulatory mechanisms, many barriers exist to effective public control over use of privately owned property. Some Westerners perceive—probably correctly—that their ability to influence the federal government is greater than their ability to control market forces. Through such influence the real costs of redirecting coal development can be shifted onto national taxpayers, who may barely notice these costs. In contrast, were those costs to be borne at the state level, they would be more painful.

Full reliance on the market also requires that natural resource holders be able to capture the value gains derived from conservation of the resource, i.e., that they be allowed to speculate. Some market critics oppose speculation in principle as morally offensive. Others, however, contend—if only implicitly in most cases—that the returns from speculation are unduly high. Due to high private risk aversion or other reasons, society concedes too much of the value of the resource as payment for the resource conservation service performed by the private speculator. In effect, this view argues that it is less expensive for society to perform the speculative function itself through government.

The specific means by which the government sought to eliminate private speculative incentives to hold federal coal was the diligent development requirement under the Mineral Leasing Act of 1920.<sup>9</sup> However, the Act's general requirement for diligent development of leases was never effectively enforced. The Federal Coal Leasing Amendments Act of 1976 eliminated any uncertainty as to the development requirement by expressly requiring that future coal leases be brought into production within ten years of lease issuance.<sup>10</sup> In the presence of this diligent development requirement, leasing of more coal than the market can absorb will result in various distortions of normal market workings. In the extreme, a company might even open a mine and stockpile the coal, simply to avoid losing the lease for lack of development. As a result, the government faces strong pressures to lease only that amount of coal which can be produced in the near term.

### *Central Planning for Federal Coal*

Although the Nixon and Ford Administrations sought to employ market approaches, congressional and judicial pressures were moving towards a much more direct government role. In 1977 the Carter Administration initiated a system of central planning for federal coal development. This effort occurred in conjunction with a wider trend towards central planning throughout the U.S. energy sector, reflected in the creation of a new Department of Energy (DOE).

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9. Mineral Leasing Act of 1920, 30 U.S.C. §§ 181–287 (1976).

10. Federal Coal Leasing Amendments Act of 1976, 30 U.S.C. § 207(b) (1976).

The new coal program developed by the Carter Administration began with DOE calculation of individual production goals for each of twelve coal regions of the United States. In six of these regions, federal coal was a major part of the total coal resource. The production goals were to be set for five and ten years in the future and to include both non-federal and federal coal. Following receipt of the DOE goals, the Interior Department would next estimate the total production (non-federal and federal) already planned or otherwise likely to occur in each region five and ten years in the future. This production was assumed to require no further federal coal leasing. If the already planned level of production fell short of the production goal, new federal leasing would be indicated. The specific level of leasing would then depend on Interior estimates of the appropriate non-federal and federal shares in meeting any projected production shortfalls. Finally, the Interior Department would have to select the best federal tracts to lease.

The Carter Administration recognized that some uncertainties would arise in making such estimates. In hindsight, however, it seems fair to say that the uncertainties were substantially underestimated by Interior officials—at least initially.<sup>11</sup> As part of the plan for federal coal leasing, separate sets of regional coal production goals were prepared by the DOE in 1978, 1979, and 1980. This effort yielded rapidly shifting production goals, providing dramatic evidence of the difficulties in central coal planning. In an admittedly extreme example, the 1990 DOE production goal for the San Juan River coal region in New Mexico equalled 58 million tons when calculated in 1978, dropped all the way to 17 million tons in 1979, and then rose back to 57 million tons in 1980 (all based on the assumptions considered most likely). The 1990 DOE goal set for the key Powder River coal region was calculated at 396 million tons in 1978, rose slightly to 418 million tons in 1979, and then fell sharply to 294 million tons in 1980.<sup>12</sup>

The information required to calculate accurate production goals for individual coal regions is extensive. For example, coal production for the Powder River coal region depends in part on demands from states to

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11. Other federal agencies, in particular, the Council on Wage and Price Stability (COWPS), Department of Justice (DOJ), and DOE, did express concern over the way Interior was calculating leasing targets, and proposed that such targets be set two to three times higher than the Interior Department numbers. See letter to Frank Gregg, Director, BLM, from Donald L. Flexner, Deputy Assistant Attorney General, Antitrust Division, DOJ, 1979. See also Internal COWPS Memorandum to Tom Hopkins and Ron Lewis from Jack Campbell, Federal Coal Leasing: Problems and Solutions (Jan. 9, 1980).

12. LEASING POLICY DEVELOPMENT OFFICE, U.S. DEP'T OF ENERGY, FEDERAL COAL LEASING AND 1985 AND 1990 REGIONAL COAL PRODUCTION FORECASTS (June 1978); WORKING PAPER: INTERIOR UPDATES TO 1985 AND 1990 REGIONAL FORECASTS (Apr. 1979); and THE 1980 BIENNIAL UPDATE OF NATIONAL AND REGIONAL COAL PRODUCTION GOALS FOR 1985, 1990 AND 1995 (Dec. 1980).

the east, such as Wisconsin. The government would need to know how much Powder River coal would be purchased by Wisconsin utilities at various prices. This knowledge in turn would require information on the cost of alternative coal supplies, such as Kentucky or Illinois coal, or alternative energy sources such as nuclear or gas power generation for Wisconsin. The potential for conservation of electric power use as power prices rise would be a further important factor. Different transportation and environmental protection costs would affect the desirability in Wisconsin of each alternative. Moreover, coal prices would not hold steady, but would change as the amounts of coal supplied from each region varied, or as the cost of factor inputs into coal production varied. Such information would be required for hundreds if not thousands of other places and circumstances. Any major changes in one part of the system would require a recalculation to take account of effects throughout the rest of the system as well. While such a system can be simulated with the use of modern computers, the results tend to be unreliable, especially at a high level of disaggregation.

By the end of Carter's tenure, even the original proponents of central planning in the Administration harbored serious doubts. Due in part to the seeming uncertainty in the central planning process, actual selection of leasing levels tended to be informed more by considerations of administrative capacity to lease than by central planning calculations.

In seeking more realistic approaches to development of federal coal resources, the Carter coal program shifted towards greater use of market mechanisms. The Reagan Administration has accelerated this trend. The movement is not towards a free market as such, but toward what might better be called a "planned" market.

Because market outcomes do not always correspond to social goals, economists have sought to find ways of redirecting the market without undermining its basic productive efficiency. While the verdict could change in the future, the political process thus far has clearly dictated that private gains from speculation in federal coal should be minimized. The government is thus constrained by a requirement that it should lease only that amount of federal coal which can be developed promptly, given construction lead times and other mechanics for commencing mine production. Some additional coal leasing may be necessary simply to facilitate the assembly of minable properties sufficient for advance commitment of coal reserves to meet utility plans.

The diligent development requirement thus creates an equity versus efficiency tradeoff. An attempt to eliminate even short-term speculative holdings of federal coal would eliminate necessary flexibility in the system and would generate large national efficiency losses. Hence, a pragmatic aim is to prevent only long-term speculation—however defined. Lessees

can hold on to federal coal for shorter periods, even while non-producing. The length of the permissible holding period will depend on social preferences in trading off distributional impacts versus efficiency of national coal use.

The disillusionment created by actual central planning experiences is now forcing this tradeoff to the fore again. Assuming some social resolution, a planned-market philosophy would seek to implement the tradeoff with a minimum of interference with the underlying market mechanism. Keeping this goal in mind, economists in the Interior Department's Office of Policy Analysis have formulated two basic market plans for federal coal leasing.

### *Market Plan I—Intertract Competition*

A new design for federal coal leasing was first proposed in 1975 by C. B. McGuire, a Berkeley professor who at the time was on leave to the Office of Policy Analysis. Under this plan, the government would first determine how much coal should be leased, preventing large scale speculative holdings. However, government would not determine which specific tracts to lease. Instead, within a sale region all or most tracts which were deemed suitable for coal development would be put up for bid. Only the specific tracts receiving the highest bids on a per ton basis would be leased, up to the specified target leasing level. McGuire called this leasing approach "intertract competition."<sup>13</sup> Separate intertract sales would be held for metallurgical coal and possibly for synthetics coal or other sufficiently differentiated coal types.

McGuire was most concerned with the likely failure of traditional sale methods "to yield a revenue near to true value of the land under optimal exploitation."<sup>14</sup> He noted that bidding competition for individual tracts was apt to be very weak, because there are a great number of potential coal mining tracts, each of which tends to be of interest to a single firm; however, bidding competition could be significantly enhanced by putting firms in a position where they would have to compete with bidders for other tracts as well, in other words, by creating *intertract* competition.

Interior analysts soon recognized that intertract competition might be even more useful as a tract selection mechanism.<sup>15</sup> Typically far more

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13. C. B. McGuire, *Intertract Competition for Western Coal Development*, Office of Policy Analysis, U.S. Dep't of Interior (Dec. 10, 1975). See also C. B. McGuire, *Intertract Competition and the Design of Lease Sales for Western Coal Lands* (prepared for the session on Federal Mineral Leasing Policy, 53rd Annual Western Economic Association Conference, June 25, 1978).

14. C. B. McGuire (1975), *supra* note 13, at 1.

15. See OFFICE OF POLICY ANALYSIS, U.S. DEP'T OF INTERIOR, *BIDDING SYSTEMS FOR COAL LEASING* (Feb. 2, 1976); and T. Teisberg and R. H. Nelson, *Coal Tract Selection and Bidding System Option Paper*, Office of Policy Analysis, U.S. Dep't of Interior (May 5, 1978). For some critical comments, see W. E. TYNER AND R. J. KALTER, *WESTERN COAL: PROMISE OR PROBLEM* (1978).

coal tracts are available for lease than the government desires to see leased. Without use of a market mechanism, the government would have to examine all the potentially leasable tracts and then decide which ones have the highest overall value. The government would be required to make extensive calculations of selling prices for different quality coal and of the costs of mining and transporting coal at the various potential sites. Under intertract competition, however, coal companies would make such calculations, to be reflected in the prices they bid for each lease. A market mechanism in the form of bidding competition among tracts thus selects the most valuable specific deposits to lease, i.e., those that receive the highest bids.

The market created through intertract competition would be similar in some respects to the private market for coal supply contracts. In that private market, the contracts signed by utilities in any particular year are limited in number and coal suppliers compete for them. Some utilities ask potential suppliers to submit bids on the price per ton the firm would accept to deliver coal of a specified quality. The supplier making the lowest bid wins the contract. Similarly, in intertract competition the firms pursuing the best federal coal tracts could afford to bid the highest prices per ton and thus win their respective coal leases. Both procedures tend to select appropriate coal sites and to obtain appropriate coal prices; both represent use of a selection mechanism that is natural to market processes.

What amounts to a form of intertract competition (although not called by that name) is currently successfully employed to sell Treasury bills. In Treasury Department auctions, bills are sold to the bidders making the lowest yield offers, up to the total number of bills to be sold as set by the Treasury. The principal difference between Treasury sales and intertract sales is that the bills being sold are identical whereas federal coal tracts are not. Some people have in fact suggested taking intertract bids on a fully standardized tonnage basis, with all tracts adjusted for coal quality differences and mining costs. However, this procedure would negate many of the tract-selection benefits of intertract competition. Intertract competition is designed to select low-cost tracts in much the same way that a government-established system of marketable pollution permits would select the firms able to reduce emissions at least cost.

Intertract competition has yet to be tested in practice, although Interior Secretary Watt had decided to do so in the April 1982 coal lease sale in the Powder River Basin. Intertract competition was to be used to lease two tracts from among four available tracts located near Ashland, Montana. The regional coal team had ranked the four tracts as having very similar environmental and socioeconomic impacts. Unfortunately, the test could not be undertaken when three of the tracts ultimately did not qualify for the sale because of surface owner consent problems. However, a precedent had been set in that intertract competition had been preferred

to administrative tract selection in a portion of a scheduled federal coal lease sale.

Intertract competition has several drawbacks. There is some loss of social control over non-economic factors related to coal development. One can argue, however, that the major externalities associated with coal development have been internalized by surface mining laws and other environmental protection measures. Remaining environmental costs could also be accounted for by subtracting estimates of these costs from company bids for each tract and then selecting for lease those tracts with the highest net bids (i.e., the amount bid minus the environmental cost estimate). Some commentators have also been concerned that, under intertract competition, companies face greater uncertainty about the prospects of winning a tract; in general, their bidding calculations become much more complex. This problem can be reduced significantly by using oral bidding for sales using intertract competition—as the Interior Department planned to do in the Montana sale.

In intertract sales, the government must still decide on the appropriate amount of coal to lease. This task is itself amenable to a market approach which we call the “inventory” method. The government would first lease a large enough inventory of federal coal reserves to provide wide competition for upcoming coal supply contracts. The goal might be to lease enough coal to meet coal needs for new coal supply contracts expected to be signed over the next seven to ten years. The trigger for new leasing, once an acceptable inventory level had been reached, would be a draw-down of the inventory as new coal supply contracts were signed. This approach would rely on direct observation of the absorption of federal coal leases in the market to signal the need for new leasing.

De facto, the government has already been making its leasing decisions in much this way. Past leasing controversies have often concerned the size of the appropriate inventory. A formal and explicit recognition of this approach should spur more analysis and better understanding of inventory requirements—drawing upon a large inventory literature.

The initial build-up of the inventory should also be carefully calculated. Holding several small intertract sales, perhaps spaced several months apart, would probably be better than attempting to establish the full inventory in a single sale. Each small sale would provide useful feedback about the demand for additional reserves and the need for further sales. This strategy would also reduce the range of value among the tracts leased in each sale and thus tend to provide more competitive, higher bids overall.

One problem is that the current ten year diligent development requirement does not give much leeway for an inventory strategy to function. In the case of large, new western surface mines, it can take as long as

seven years to get into production after the firm obtains a coal supply contract.<sup>16</sup> Thus, the effective time period within which a new lease will have to obtain a coal supply contract could be as short as three years. The government could be required to restock its inventory completely every three years with new coal leases. Among other concerns, the likelihood of ending up with either too large or too small an inventory is greatly increased in operating under such a tight leash. For the inventory approach to achieve its full potential, Congress would have to allow more time for coal leases to reach development.<sup>17</sup>

While intertract competition will make the final tract selection from the eligible set, the government must still determine the tracts in this latter category. Each potential tract must be evaluated to determine its environmental acceptability for leasing, which can be a costly exercise. However, a market mechanism can be employed in this undertaking as well. Companies would be requested to nominate tracts for inclusion in a lease sale, but would be required to pay a fee for each nomination. If the tract were actually leased, the winning bidder would be required to reimburse the initial nominator for his fee. Charging a nominations fee equal to the administrative cost of evaluating each nomination would recover the costs to the government, as well as induce firms to focus nominations on tracts that actually have a good chance of being leased.<sup>18</sup>

Postponing environmental and other tract evaluation until after the intertract auction (but still prior to final lease issuance) would be another way to reduce tract evaluation costs. After the auction only those tracts receiving high bids would then be evaluated. If this evaluation revealed unacceptable environmental or other consequences, the tract would not be leased and another tract (which had received a lower bid) would instead be leased. Bids thus would be accepted contingent on acceptable results of later environmental studies.

### *Market Plan II—A Uniform Minimum Price System*

Under intertract competition, government sets the quantity of coal to be leased and a market mechanism then determines the minimum price required to obtain a coal lease. The alternative would be to set a minimum price and then let this price determine the amount of coal leased in the market. Operationally, government would simply make all or most en-

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16. Policy Planning and Evaluation, Inc., *Impact of Government Regulations on Coal Mine Start-Up and Production* (May 29, 1981) (prepared for the Office of Policy Analysis, U.S. Dep't of Interior).

17. See Nelson, *Undue Diligence: The Mine-It-Or-Lose-It Rule for Federal Coal*, REGULATION 34 (Jan./Feb. 1983).

18. For further discussion of a nominations fee approach, see D. J. Bieniewicz, *Improvements to the Federal Coal Leasing Program Linked to the Use of Intertract Bidding*, Office of Policy Analysis, U.S. Dep't of Interior 28-30 (draft April 24, 1981).

vironmentally acceptable tracts available for lease. Any high bid for a tract that was above the minimum price would be accepted. Separate minimum prices would be set for metallurgical coal or any other special uses for which coal types cannot be substituted.

If the intertract approach is similar to a system of marketable pollution permits, then the price control approach is similar to a system of emission fees. Either strategy is capable of controlling leasing/pollution levels. In fact, in a world of perfect knowledge and zero transactions costs, the results would be exactly the same under a quantity or a price control strategy. Which approach is actually preferable must be determined based on administrative feasibility and cost, information requirements, and political acceptability, as well as the cost of resultant leasing/pollution levels that are too low or too high.

Recently, the pressure for more rapid mineral leasing has led to some use of price control methods in federal leasing of oil and gas on the Outer Continental Shelf (OCS). In recent years there had been about a half dozen OCS lease sales annually with approximately 100 to 250 tracts offered in typical sales. Around 1970, the minimum bid was set at \$25 per acre, or \$125,000 for a standard 5,000 acre OCS tract. In 1982, the Interior Department initiated a new policy of "area wide" sales of much greater size. Concurrently, the minimum bid was raised to \$150 per acre, or \$750,000 for a typical tract. The Department explained that "the program will make more acreage available for leasing, . . . and will use the market mechanism rather than government decisions to select areas for lease and exploration."<sup>19</sup>

The Interior Department has also made a limited move towards a price control method in federal coal leasing. In 1982, the Department raised the minimum bid for federal coal leases from \$25 an acre to \$100 an acre—an action unlikely, however, to create an effective screen for identification of high-value coal sites. Although \$100 an acre is a high price for thin-seamed eastern coal, it is quite low for much thicker-seamed western coal.

The appropriate minimum price per ton could be set in several ways. For example, the minimum could be based on observation of prices paid in private sales of prime leases, or could be set via application of exhaustible resource theory to estimate the size of the present worth economic rents of coal near its optimal time of leasing. Alternatively, the minimum price could be identified by the lowest bid accepted in an intertract sale, where quantity control is used to set the appropriate leasing level, or by holding a series of small sales, starting with a rather high

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19. OFFICE OF THE SECRETARY, U.S. DEP'T OF INTERIOR, ADOPTION OF PROPOSED FINAL FIVE-YEAR OCS OIL AND GAS PROGRAM ANNOUNCED (May 13, 1982).

minimum price per ton and reducing it in each further sale until a leasing level deemed appropriate is reached. Once an inventory of leases is in place, the minimum price could simply be adjusted for changes in the inventory. If the inventory tends to exceed the level desired, the price should be raised. Conversely, if the inventory is too low, the price should be reduced.

A mixture of approaches may in fact be desirable. It is likely for political, emotional reasons that tight controls over levels of leasing will be preferred for initial establishment of a suitable inventory of federal leases available for new production. However, once that inventory is built up, a switch to a pricing strategy would offer some significant advantages. Simply leasing to anyone willing to pay the minimum price would allow reduced administrative effort and provide much faster response time to company coal needs. Such leasing would be drawn from a base of tracts already determined to be environmentally acceptable for development.

The old preference right leasing system, abandoned in the 1970s, was similar to this proposed system—although limited to “unexplored” coal regions.<sup>20</sup> This system’s main shortcoming was that it used in effect a zero price, and thus was incapable of controlling leasing levels during a time of rapidly rising coal resource values.

One means of charging a part of the minimum price would be to include a requirement for payment of an annual rental, equal to some percentage of the lease bonus. Thus, for a valuable western lease which obtained a bonus of say \$4,000 per acre, a one percent (\$40 an acre) annual rental might be required—as compared with three dollars an acre at present. Such a rental would create a disincentive to speculative lease holdings, provide a steady revenue stream to the states in which federal coal is located, and make it easier for small firms to compete with large firms in bidding for federal coal.

### *Obstacles to Market Planning*

While the federal government has not yet expressly adopted either of the market plans described above, a number of limited steps have been taken in these directions, some of which have been mentioned previously. Perhaps most important, there has been broad recognition of the difficulties of central planning and the importance of moving towards a market mechanism.

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20. Under the preference right leasing system an applicant could file for a two year prospecting permit in areas where the presence of coal was uncertain. To obtain a lease the holder of a prospecting permit had to demonstrate that coal had in fact been found in “commercial quantities.” This program was suspended by the Interior Department in 1971 and abolished by the Congress in 1976. See Fairfax & Andrews, *Debate Within and Debate Without: NEPA and the Redefinition of the “Prudent Man” Rule*, 19 NAT. RES. J. 505 (July 1979).

A major remaining obstacle to formal market planning is concern that any explicit calculation of leasing limits will encourage monopoly restrictions on federal coal supplies.<sup>21</sup> Western states, which receive much of the revenues from leasing, might in fact benefit from a restricted federal coal supply and the higher coal prices that would result. Since the market plans described previously involve an explicit limit on leasing, their adoption might end up providing a mechanism for inappropriate restriction of coal supply. This would, of course, be a perversion of the plans' intent, but such a gap between intent and result is by no means unheard of. Policy makers inclined to free-market views have been the most concerned in this regard.

On the other hand, neither have policy makers inclined towards central planning supported planned-market approaches with great enthusiasm. The central planning proponents like the explicit limit on leasing amounts—the sticking point for the free marketeers—but are discomfited instead by the loss of social control in using a market mechanism to accomplish tract selection. They feel much more comfortable with retention of tight government control over the entire coal development process. While easily caricatured and overstated, the natural bureaucratic impulse is also towards retaining tight control, in part reflecting a distrust of market unpredictability.

The coal industry has been strongly opposed to intertract competition thus far. In public meetings prior to the Powder River lease sale, almost every industry representative objected to the proposal for a limited experiment with intertract competition. Business seems primarily concerned with the potential for stiffer competition. However, business attitudes may change when some of the benefits to industry—especially the assurance of a neutral tract selection process—are more widely perceived.

The leading proponents of a planned market for federal coal have been professional economists, mostly in government. Given normal government inertia and other obstacles to any new proposal, planned-market approaches may have made as much headway as could be expected thus far.

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21. The government role should be that of "efficient speculator," not of monopolist. See Quirin and Kalyon, *The Problem of Timing in Resource Development*, in *MINERAL LEASING AS AN INSTRUMENT OF PUBLIC POLICY* 143 (M. Crommelin & A. R. Thompson, eds. 1977) and Teisberg, *Federal Management of Energy and Mineral Resources on the Public Lands*, 11 *BELL JOURNAL* 448 (Autumn 1980).