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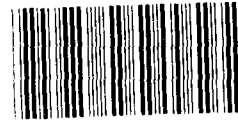
GAO

Briefing Report to the Chairman  
Senate Coal Caucus

March 1986

STEAM COAL  
IMPORTS

An Evaluation of the  
Commerce Department  
Study on U.S. Steam  
Coal Imports



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UNITED STATES GENERAL ACCOUNTING OFFICE  
WASHINGTON, D.C. 20548

NATIONAL SECURITY AND  
INTERNATIONAL AFFAIRS DIVISION

March 28, 1986

B-222049

The Honorable Arlen Specter  
Chairman, Senate Coal Caucus  
United States Senate

Dear Mr. Chairman:

In response to your request that we analyze the Department of Commerce study, Potential for U.S. Steam Coal Imports, we examined the major assumptions of the study to determine how reasonable they are and how sensitive the study's findings are to changes in the assumptions. In addition, we examined how increased coal imports would affect employment and the location of production in the U.S. coal industry, the solvency of the Black Lung Disability Trust Fund, and America's energy independence. We also examined the effect on U.S. coal production and the Black Lung Disability Trust Fund of a surcharge on U.S. coal imports, with the proceeds from the surcharge going into the Fund. (See app. I.)

The Commerce study, made for the House Committee on Appropriations, estimated the potential penetration of foreign steam coal into the U.S. electric utility market for the year 1990 and its effect on U.S. coal production. The Commerce study included two scenarios--the first assuming normal utility coal-buying practices, and the second assuming coal imports were at a practical upper limit. Under the first scenario, U.S. coal imports were estimated at 6.4 million tons, or about 1 percent of total utility consumption of coal; under the second scenario, coal imports were estimated at 17.7 million tons, or about 3 percent of total utility consumption of coal. The number of mining jobs that would be displaced by coal imports were estimated at 1,120 under scenario one and 2,780 under scenario two. The indirect employment effect would be one to two additional jobs lost for each mining job lost.

The Department of Commerce used appropriate methodology and data in carrying out its study. The major assumptions in the study appear reasonable, and its findings are fairly insensitive to realistic changes in the assumptions. Nevertheless, we believe that a more exhaustive study based on estimating supply and demand relationships in the United States and worldwide in 1990 would produce a potentially more useful study. The Energy Information Administration is currently making just such a study, which is expected to be completed by the end of the year.

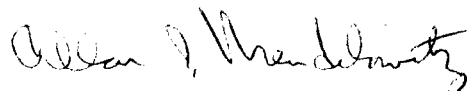
The Black Lung Disability Trust Fund was established in 1978 to pay benefits to miners disabled by black lung disease. U.S. coal producers provide revenues for the Fund by contributing \$1 for each ton of coal they mine underground and 50 cents for each ton of coal they mine from the surface. The Fund has operated at a deficit since it was established in 1978.

If U.S. coal imports were to increase, revenues for the Fund would fall, but the effect on the Fund would be relatively small. If the level of U.S. coal imports in 1983 had equaled the level estimated under scenario two of the Commerce study, the reduction in U.S. coal production would have resulted in at most a 4.9-percent increase in the borrowing of the Fund from the U.S. Treasury. If a \$1 per ton surcharge were imposed on imported coal, the Fund would be in a better financial position than if no surcharge were imposed, but its overall position would be very similar to what it is now. If a \$1 per ton surcharge were imposed and imports remained at their 1983 levels, borrowing from the Treasury would have fallen by 0.4 percent in 1983.

The effect of increased coal imports on U.S. energy independence appears minimal. If U.S. coal imports in 1983 were at the level projected under scenario one, these imports would have equaled only about 1 percent of the coal used by U.S. utilities. Even if U.S. coal imports were to increase, the United States would still have the world's largest supply of coal reserves that could be mined should foreign supply conditions change.

We did not obtain official comments on this report from the Department of Commerce. However a draft of this report was reviewed by program-level officials of the Departments of Commerce and Energy and their comments were considered in completing the report. Unless you publicly announce its contents earlier, we will distribute the report to other Members of Congress and officials of the executive branch 30 days after the date of the report. If there are any questions regarding the contents of this briefing report, please call me on (202) 275-4812.

Sincerely yours,



Allan I. Mendelowitz  
Associate Director

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ABBREVIATIONS

EIA            Energy Information Administration  
f.o.b.        free on board  
MBtu         Million British Thermal Units

EVALUATION OF THE COMMERCE DEPARTMENT STUDY ON  
U.S. STEAM COAL IMPORTS

In April 1985, the Department of Commerce released a study, Potential for U.S. Steam Coal Imports, that examined the potential for U.S. electric generating utilities to buy imported coal and estimated the effect of such increased imports on U.S. coal production. The House Committee on Appropriations had requested Commerce "to conduct a comprehensive study of the current and long-range impact of expanded coal marketing" by foreign exporting countries. These countries were subsequently identified as Australia, Canada, Colombia, Poland, and South Africa. After discussions with Committee staff, Commerce agreed to estimate what the effect would have been on U.S. coal production in 1983 if the excess foreign supply of coal in 1983 was at its projected 1990 level.

OBJECTIVE, SCOPE, AND METHODOLOGY

The Chairman of the Senate Coal Caucus requested that we analyze the Commerce study. As a result of discussions with the Chairman's representative, we agreed to concentrate our analysis on the major assumptions of the study. In addition, we agreed to examine (1) how increased coal imports would affect the U.S. coal industry, (2) the solvency of the Black Lung Disability Trust Fund, and (3) America's energy independence. We also agreed to examine the effect of a surcharge on coal imports, the proceeds of which would go into the Black Lung Disability Trust Fund.

We reviewed coal studies produced by the International Trade Commission, the Energy Information Administration (EIA) of the Department of Energy, and the Departments of Commerce, Labor, and Treasury. We also interviewed representatives of the Departments of Commerce and Energy. Our work was conducted in Washington, D.C., between October 1985 and January 1986.

DEPARTMENT OF COMMERCE STUDY

The Commerce study assesses the potential limits of steam coal imports in 1990 based on 1983 price relationships, U.S. utility procurement practices, and potential excess export capacity of foreign producers. It does not attempt to model the demand for and supply of coal in 1990, but rather makes a rough estimate of the level of excess supply of coal forecast for the rest of the world in 1990 and estimates what the effect would have been on U.S. coal production in 1983 if this excess supply had existed then.

The study assumes that the principal coal exporting countries would supply their traditional markets first and would market only their excess export supplies in the United States. (Excess export supply is defined as the combined 1990 export capacity of the five countries in the study, less their projected 1990 exports to countries other than the United States.) The study assumes that this excess supply will amount to 40 million tons in 1990. This assumption is based on various industry forecasts and data from the EIA. The 40 million tons represent 6.4 percent of the 625 million tons used by U.S. utilities in 1983.

The study assumes that the ability of foreign countries to successfully market their excess coal supplies in the United States depends on (1) the price of foreign coal relative to the price of U.S. coal and (2) the physical specifications of the coal, which include such factors as grindability and ash content. Each utility plant needs coal with physical specifications compatible with the boilers in the plant. The physical specifications each utility plant requires are compared in the study with the specifications of the coal exported by the supplying nations.

The study selects two types of coal from each supplier country to represent the typical quality of coal exported in 1983. These two types of coal accounted for at least 90 percent of the coal exports in each of the supplier nations. The study determines, on a plant-by-plant basis, which exporting nations produced a coal that could actually compete with U.S. coal. The price of U.S. coal is then compared with that of foreign coal to determine if a utility plant could have saved money by purchasing foreign coal. The price a plant paid for U.S. coal in 1983 is available from published reports. The price a plant would have paid for foreign coal in 1983 is constructed by adding the price of coal on board ship at its port of export (the free on board or f.o.b. price) to the cost of transporting the coal to the plant. The f.o.b. prices of foreign coal come from a variety of sources, including trade journals, government statistics, and private studies. The cost of transporting coal from foreign ports to each U.S. utility plant is estimated by examining the cost of inland U.S. transportation and ocean shipping rates.

The study assumes that the delivered price of foreign coal would have to be at least 25 cents per million Btus below that of U.S. coal to entice a utility plant to purchase foreign coal. The price of imported coal would have to be lower to offset the problems involved in "switching suppliers," in "not buying

American coal," and in "buying from unknown suppliers." The price difference was arrived at after discussions with several utilities and agrees in general with the price differences noted in Europe in recent years between U.S. and foreign coals. This price difference amounts to about \$6 per ton for coal that has 12,000 Btus per pound. The average delivered price of coal in 1983 was \$35 per ton.

The study also assumes that utilities would limit their purchases of foreign coal to prevent the possibility of a supply cutoff for political reasons and to limit their exposure to public censure for not buying American coal. Two scenarios are considered, the first reflecting normal utility coal-buying practices when lower priced coal is offered by a new supplier, and the second representing a practical maximum amount that might be imported.

1. First scenario: imports are limited to the level of spot purchases made in 1983; or if no spot purchases were made, to 10 percent of the contracted tonnage of a utility plant.
2. Second scenario: imports are limited to one-third of the total coal needs of a utility plant in 1983.

The 10-percent figure in the first scenario was chosen somewhat arbitrarily, although most contracts allow utility plants a 10-percent leeway in delivery volumes, which would give the plants the opportunity to purchase foreign coal. The one-third figure in the second scenario is also somewhat arbitrary, but European and Japanese utilities generally limit their coal imports from any one supplier country to 40 percent.

Because many U.S. plants might be able to achieve substantial savings by purchasing foreign coal, the study assumes that those U.S. plants that could realize the highest savings would actually purchase the coal. The displaced production is then aggregated across plants by state of origin to determine which states would lose production because of imported coal.

Under the first scenario, total U.S. imports of coal amount to 6.4 million tons, or 1.0 percent of 1983 consumption of coal by U.S. utilities, and under the second, to 17.7 million tons, or 2.8 percent of consumption. U.S. utilities actually imported 0.8 million tons of coal in 1983. In both scenarios, Wyoming accounts for more than one-third of the displaced production and Montana and Kentucky each account for between 10 and 15 percent



of the displaced production. Colombian coal supplies between 85 and 87 percent of the foreign coal in both scenarios. The number of mining jobs lost because of coal imports is 1,120 under the first scenario and 2,780 under the second. The indirect employment effect is estimated to be between one and two additional jobs lost for each mining job lost.

The study points out that the potential import figures are estimates of the possible limits of penetration by foreign coal and should not be construed as forecasts of coal imports. It notes that utility markets have changed since 1983 and that these changes can alter the competitive position of foreign coal in the future.

#### ANALYSIS OF THE COMMERCE STUDY

The Department of Commerce used appropriate methodology and data in carrying out the research asked for by the House Committee on Appropriations. The methodology used in the study seems reasonable and contains no serious flaws; the major assumptions appear reasonable, and even if they were changed within realistic bounds, the conclusions of the study would not change much. As noted previously, these major assumptions are as follows.

1. The worldwide (excluding the United States) excess supply of coal in 1990 is assumed to be 40 million tons--Colombia alone is assumed to have 15 million tons of excess supply.
2. The delivered price of foreign coal would have to be 25 cents/MBtu lower than that of U.S. coal before U.S. utility plants would switch to foreign coal.
3. U.S. utility plants would limit their purchases of foreign coal to either the level of their 1983 spot purchases (scenario one) or one-third of their total fuel needs for 1983 (scenario two).

If the excess supplies of coal available from Australia, Canada, Poland, or South Africa were assumed to be higher in 1990, the findings of the study would change little because, even under scenario two, all excess coal would not be absorbed by the U.S. market and coal would remain available for sale from these countries. If the excess supply of coal available from Colombia was assumed to be higher in 1990, however, the results of the study could be significantly changed. But it is unlikely that

Colombian coal exports could be much higher in 1990. The base scenario in a 1985 Department of Energy study<sup>1</sup> estimates that total Colombian coal exports in 1990 will be 13 million tons, which is less than the figure used in the Commerce study.

If the minimum difference between the prices of U.S. and foreign coal needed to entice U.S. utilities to purchase foreign coal is less than 25 cents/MBtu, coal from Australia would still have trouble competing in the U.S. market because of the distance that this coal must travel before reaching those plants that can potentially save the most by importing coal. These plants are generally located near the southern tip of Lake Michigan and along the Gulf Coast. The sensitivity of the delivered prices of Australian coal to ocean freight rates makes it difficult, although certainly not impossible, for such coal to achieve a significant market share in the United States. The potential for South African coal increasing its penetration into the U.S. market is limited by likely public opposition to importing from South Africa. High transportation costs from the Western provinces of Canada, where most Canadian coal is mined, limit the ability of Canadian coal to penetrate the U.S. market. Because almost all the excess Colombian and Polish coal available was purchased under the 25 cent/MBtu assumption in scenario two, the effect of reducing this cost assumption would have little effect on the level of U.S. coal imports.

If the assumption that imports could account for no more than one-third of a U.S. utility plant's coal supplies was removed, the effect on the results of the study would also be small. If all plants limited by the one-third assumption were assumed to import their total coal requirements, the maximum increase in U.S. coal imports that would occur would be 4.7 million tons more than the 17.7 million tons that would be imported under the conditions of the second scenario.

Although the Commerce study does a good job in addressing the research question it set out to analyze and provides some useful information by estimating which U.S. states could be most hurt by increased coal imports, a potentially more useful analysis would have been one based on the world coal market in 1990 rather than one that assumes that most of the factors in the coal market will not change between 1983 and 1990. Such an analysis would have been much more complex and difficult. To be

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<sup>1</sup>Annual Prospects for World Coal Trade 1985, Energy Information Administration, Department of Energy; May 1985.

comprehensive, such a study would have included the following important changes which were not addressed in the Commerce study but could take place between 1983 and 1990.

1. Changes in U.S. demand.
2. Changes in productivity in the coal industry.
3. The effects of new utility plants coming online between 1983 and 1990.
4. The effects of long-term contracts between U.S. coal producers and utilities that end between 1983 and 1990.
5. Possible changes in the relationship between the prices of foreign coal and U.S. coal.
6. Possible changes in the prices of other energy sources, such as oil and gas.
7. The possible response of U.S. producers to increased foreign competition.
8. Possible changes in the value of the dollar vis-a-vis the currencies of the major coal-exporting countries.

A Department of Energy study that involves a more thorough analysis of possible increases in U.S. coal imports is currently underway and is scheduled to be completed this year.

#### BLACK LUNG DISABILITY TRUST FUND

The Black Lung Disability Trust Fund was established in 1978 to pay benefits to certain coal miners totally disabled by the black lung disease and to dependents of miners who died from or were totally disabled by the disease. The revenues of the Fund come primarily from an excise tax imposed on most domestically mined coal. The current tax is the lesser of (1) \$1 per ton for coal from underground mines and 50 cents per ton for coal from surface mines, or (2) 4 percent of the price for which the coal is sold.

The Fund has been operating at a deficit since it was established and has had to borrow from the U.S. Treasury. Through fiscal year 1984, the Fund paid out about \$3.9 billion in benefits and its cumulative debt to the Treasury was \$2.5 billion.

U.S. imports of coal amounted to 1.3 million tons in 1983. If a surcharge of 50 cents per ton had been imposed on coal imports in 1983 and the revenues diverted to the Black Lung Disability Trust Fund, the Fund would have received \$0.65 million at most. The Fund borrowed \$358 million from the U.S. Treasury in fiscal year 1983. Even if a surcharge of \$1 per ton had been imposed, the revenues from the surcharge at most would have amounted to only 0.4 percent of the amount borrowed from the Treasury.

From 1978, when the Fund began borrowing from the U.S. Treasury, until 1984, U.S. imports of coal totaled 10.4 million tons. With a 50-cent per ton surcharge, the revenues from the surcharge would have amounted to \$5.2 million at most, or 0.2 percent of the total debt; if the surcharge had been \$1 per ton, the revenues would have amounted to 0.4 percent of the total debt at most.

Under scenario one of the Commerce study, U.S. coal imports would amount to 6.4 million tons. With a 50-cent per ton surcharge, the Fund would at most receive \$3.2 million, or 0.9 percent of the 1983 borrowing from the Treasury. A \$1 per ton surcharge would reduce borrowing from the Treasury by 1.8 percent at most.

Under scenario two, U.S. coal imports would amount to 17.7 million tons. The 50-cent per ton surcharge at most would yield \$8.85 million, or 2.5 percent of borrowing from the Treasury in 1983; the \$1 per ton surcharge would yield 4.9 percent of borrowing at most.

The imposition of a surcharge should also affect U.S. coal production because a rise in the price of imported coal should lower the demand for imports and increase the demand for U.S. coal. However, a 50-cent per ton surcharge would only increase the price of imported coal by about 2 cents/MBtu, which would probably not significantly reduce the demand for imported coal. The Commerce study found that when the price of imported coal was required to be at least 25 cents/MBtu less than the price of U.S. coal before a U.S. utility plant would import foreign coal, the expected level of U.S. coal imports would be 6.4 million tons. If the critical price differential were reduced to 23 cents/MBtu, as it would be under the Commerce assumptions and a 50-cent per ton surcharge, the effect on U.S. coal imports would probably not be significant.

ENERGY INDEPENDENCE

The United States, with 1.7 trillion tons of coal reserves, has the world's largest coal resource base and has been the world's largest coal producer in recent years. If U.S. coal imports in 1983 had increased to the level projected under scenario one, only about 0.2 percent of total U.S. energy consumption would have come from imported coal, suggesting that the effect of U.S. coal imports on U.S. energy independence is not very great.

ARLEN SPECTER  
PENNSYLVANIA

COMMITTEE  
JUDICIARY  
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INTELLIGENCE

## United States Senate

WASHINGTON, DC 20510

September 20, 1985

The Honorable Charles A. Bowsher  
Comptroller General  
General Accounting Office  
441 G Street, N.W.  
Washington, D.C. 20548

Dear Mr. Bowsher:

As chairman of the Senate Coal Caucus, I request that the General Accounting Office undertake a sensitivity analysis of the Department of Commerce's U.S. Steam Coal Imports April 1985 study. I am concerned that this study may seriously underestimate future coal imports. In particular, I would like GAO's study to include responses to the following questions:

1. What are the underlying assumptions of the Department of Commerce's studies?
2. What effect would changes in these underlying assumptions have on the Department of Commerce's study conclusions regarding coal imports?
3. If coal imports were to increase, what effect would this have on employment in coal and coal-related industries?
4. If coal imports were to increase, what effect would this have on the solvency of the Black Lung Trust Fund?
5. If coal imports were to increase, what are the implications of this on national security and America's energy independence?

I would appreciate your prompt attention to this important matter. When the Senate considers legislation this Congress, it is vital that we have essential information so that we can carefully evaluate energy-related issues that impact this important industry.

Sincerely,



Arlen Specter

AS:bms

cc: William J. Anderson

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