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My name is John H. Lichtblau. I am research director for the Petroleum Industry Research Foundation, an organization composed of independent East Coast oil products marketers. In presenting this statement I also speak for the New England Council of Boston, Mass. and for the Oil Users Association whose headquarters are in Miami, Fla.

This Committee has heard a number of witnesses testify that residual fuel oil imports are a significant factor in the decline in U.S. coal mining employment over the past several years.

We believe this assertion to be incorrect. In our view, residual fuel oil has played only a negligible part in the decline of the coal industry's labor force. Hence, maintenance or tightening of existing restrictions on the residual fuel oil imports are not justifiable as a job-protecting measure for coal miners. The restrictions may possibly bring about higher coal prices and profits for some coal companies. But they will not make a dent into the industry's unemployment problem.

Coal employment has gone down steadily since 1948 from nearly 442,000 workers to a current force of about 174,000 workers. Until 1957 two principal factors were responsible for this drop, declining consumption of coal and increasing productivity in coal mining. The first factor was caused by the well known dieselization of railroads, the loss of the commercial and residential heating market to oil and gas, the

inroads of natural gas into the industrial fuel market and the decline in coke-oven operations. Together, these developments accounted for a 216 million ton drop in coal sales between 1948 and 1960 while total U.S. domestic coal consumption declined by only 140 million tons, from 520 million tons to 380 million tons.

Residual fuel oil had very little to do with this decline. It accounted for none of the 93 million-ton loss in railroad consumption and none of the 26 million-ton decline in coking operations. It contributed somewhat to the 56 million-ton drop in retail deliveries of coal. But while the share of bituminous coal in residential and commercial fuel consumption - where most coal retail deliveries go - dropped from 47 per cent in 1946 to 9 per cent in 1959, the share of residual fuel oil increased during this same period only from 5-8 per cent. The displacement of coal in this market was therefore due primarily to the sharp increase in the share of gas and light fuel oil.

Similarly, the share of coal in U.S. industrial fuel consumption has dropped sharply in the post-war period while that of residual oil has remained stationary but that of gas rose sharply.

Of course, these changes reflect national trends rather than those on the East Coast where most of the competition between residual oil and coal takes place. Unfortunately, historical statistics of regional coal consumption do not exist. However, we do know, for instance, that between 1948 and 1959 utility gas sales to industrial consumers on the East Coast increased by the equivalent of 18 million coal-tons while residual fuel oil sales for industrial purposes rose by only 12 million coal-ton equivalents. All the evidence suggests therefore that the decline in coal consumption since 1948 was due primarily to shifts to fuels other than residual oil.

In fact, the principal offsetting trend to coal's various market losses has occurred in the one market in which coal and residual oil compete most directly - the utility market. Here we do have historic regional statistics. These show that coal sales to utilities have increased much more rapidly than oil sales, particularly in the last 10 years. In 1950 East Coast utilities consumed 40 million tons of coal, equal to 72.5 per cent of their total fuel consumption. In 1960 they consumed 67 million tons of coal, equal to 74.4 per cent of total fuel consumption. During the same period residual fuel oil consumption declined from 58 million barrels to 55 million barrels or from 25 to 15 per cent of total East Coast utility fuel consumption. Here, again, the competitive threat to coal sales came from natural gas, whose share of total fuel consumption rose from 2.4 per cent to nearly 11 per cent since 1950 and not from oil whose share declined.

Let us now look at what happened to coal mining employment while all these changes took place in the industry's marketing sector. In 1948 the bituminous coal industry worked 95.8 million man-days. By 1960 it was down to approximately 31.5 million man-days. About 45 per cent of this decline is due to the aforementioned loss of markets, the balance can be traced directly to improvements in productivity. In 1948 each worker produced an average of 6.26 tons of coal per day. In 1960 he produced over 13 tons per day. The reason for this dramatic improvement in productivity lies primarily in the well known mechanization of mines which has made U.S. coal mining the most efficient operation of its type in the world. A concomitant feature has been the steadily growing ratio of strip mining to underground mining, since man-hour productivity in strip mining is twice as high as in underground mining.

Over-all labor productivity in the U.S. coal industry has risen at more than twice the rate of U.S. industry in general since 1948. This exceptional achievement has probably saved the coal industry from economic extinction by keeping it competitive with the other less labor-intensive fuel industries. But it has taken its toll in the form of heavy technological unemployment. And I might add that this process has not yet run its course. In 1960 alone nearly 2.5 million man-days, equal to 7.5 per cent of the total number of man-days worked, were lost to productivity improvements. This is why coal employment has continued to decline in both 1959 and 1960 despite a small increase in coal production in each of these two years (from 410.4 million tons in 1958 to 412 million in 1959 and 415.5 million tons in 1960).

Thus the current trend of coal employment is by itself not a sign that the industry may be in economic difficulties, since this trend is now no longer due to loss of markets but only to improvements in technology. In fact, on the basis of current profit margins the industry appears to be doing relatively well. For instance, Consolidation Coal Company, the nation's largest coal producer, had an operating profit margin last year of 14.4 per cent, the highest since 1955. Peabody Coal, the second largest producer, had a margin of 26.4 per cent, the highest in the last 10 years; while the Pittston Company, the third largest producer, had a margin of 10.1 per cent, also the highest in the last 10 years. Furthermore, according to the First National City Bank of New York, the coal industry's overall margin on sales compares favorably with that for U.S. manufacturing. Earlier this year two well known independent financial newspapers - The Wall Street Journal and Barron's Weekly - wrote feature articles on the "Come-back for Coal" and coal's bright future, in line with the rapid growth of its principal market - the utilities. As we pointed out earlier, the share of

residual fuel oil in the utility market has declined over the last decade.

In discussing competition between residual fuel oil and coal the rising level of residual fuel oil imports is sometimes taken as evidence that coal is being displaced. This, however, is quite incorrect. Residual fuel oil is imported to supplement the declining domestic production of this product. The reason for this decline lies in the by-product nature of residual fuel oil in domestic refinery production and the lack of an economic incentive for domestic refiners to produce more of it than the minimum falling off in the process of refining higher value products. In consequence, the yield of residual fuel oil per barrel of crude oil refined has declined in every year since the end of World War II. We must therefore look at the total residual fuel oil supply - domestic and foreign - in judging the competitive impact of this fuel. But the total domestic residual fuel oil consumption east of California was actually some 60,000 b/d lower in 1960 than in 1950. A somewhat different trend exists on the East Coast where total residual fuel oil consumption has risen by slightly more than one per cent per year over the past 10 years (parenthetically, a very modest increase by comparison with the growth rate in U.S. industrial production or energy consumption). But only 35 per cent of all domestic coal shipments go to the East Coast. The other 65 per cent are consumed in inland areas, generally not accessible to imported residual fuel oil. In these areas coal has reaped the benefit of the declining domestic production of residual oil which has forced consumers to look for alternate under-boiler fuels.

On the East Coast active competition between residual fuel oil and coal is currently confined almost completely to a number of utilities with multiple firing facilities plus a few industrial plants with ready oil and coal burning equipment. Last February we stated at the hearing

before the Secretary of the Interior that the total volume of such directly competitive residual fuel oil imports equalled no more than about 6 million tons of coal in 1960. This figure was subsequently confirmed by the Oil Imports Administrator who stated on April 5 before the House Interior Appropriations Subcommittee, " I would say that roughly 6 million tons is actually where the competition rests between coal and residual fuel oil". The amount of additional labor required to produce these 6 million tons of coal is so small that it would probably not add a single worker to the presently employed coal labor force.

But if imports restrictions on fuel oil have no effect on increasing the employment of coal miners they could very well have an effect on decreasing other employment on the U.S. East Coast. For as a direct result of these restrictions, the cost of residual fuel oil throughout the East Coast has risen. Every public bid awarded for this commodity in New York and Boston this year reflects this increase as well as every commercial price quoted.

Since the most important use for residual fuel oil is for industrial purposes this means a higher fuel cost for industries located on the East Coast. It also means an increase in the fuel cost of those East Coast utilities which cannot readily switch to coal or gas. For some industries this is quite a serious matter. For instance, in the pulp and paper industry total fuel costs are equal to 7 per cent of the value added in manufacturing. The same holds true of the chemical industry while in the stone, clay and glass industry fuel costs account for 9 per cent of the value added and in the primary metal industry for over 10 per cent.

All of these industries are represented on the East Coast, some of them, like pulp and paper, in very large numbers. Obviously an increase in their fuel costs could significantly curtail their ability to compete with industries located in other areas. In turn this would affect East Coast employment.

The Eastern Seaboard, as the nation's major energy-deficit region has always been laboring under the handicap of relatively high energy costs. Average cost of fuel per net kilowatt hour was 0.43 cents in New England, 0.39 cents in New York and 0.38 cents in Florida in 1959, compared to a national average of 0.28 cents.

To add to this handicap by restricting residual fuel oil imports into the East Coast is neither equitable nor economically justifiable. And while it has not created additional jobs for coal miners it will, if continued long enough, reduce existing jobs in a number of other industries.