

Adding up the U.S. railroad boom

Stephen Parsons analyzes actual capacity to handle coal shipping, and the coal export push.

Faced with a recession-induced 20 to 30 percent drop in automobile, steel and related industrial merchandise freight, a number of major railroad lines are pinning their financial hopes on the resurgence of demand for coal both domestically and abroad. They are counting on coal to hold their own—at the expense of the trucking industry and non-coal oriented railroads. And in some cases they are dreaming of potentially lucrative mergers with these crippled lines.

But the railroads' euphoria over the coal boom is at best dubious. Although the railroads correctly project a sharp increase in European and Japanese demand for U.S. coal over the next several years, there is simply no way for American coal ports—already operating at more than full capacity—to handle anything like this volume.

Moreover, neither the railroads nor the coal companies seem to be facing the staggering capital investment requirements for new port facilities. They are relying on local and federal authorities to finance port development, despite the clear inability of public agencies to raise the requisite funds in the strapped capital markets.

In addition, the drastic drop in mining productivity over the last decade, coupled with inadequate maintenance, modernization, and capital investments by both the coal companies and railroads, threatens to drive the price of U.S. coal into the stratosphere. Coal companies in particular are relying almost totally on their idle capacity to produce more coal, with precious little funds slated for modernization. When you throw in the added expense of EPA delays and pollution controls, the boom looks like a blip.

The shift to coal

While trucking revenue ton-miles have plunged 22 percent this year—in no small measure abetted by the specter of deregulation—railroad ton-miles have essentially kept pace with last year's levels, and revenue is not substantially off. Although increased grain haulage is an important secondary factor, revenue-originated freight in coal has jumped from around 400 million net

tons in the early 1970s to 473.7 million net tons last year, due to the enormous petroleum price increases since the 1973 Mideast war. As of 1979, coal tonnage comprised 32.3 percent of the railroads' originated tonnage, from a level of 26.9 percent in 1970—and the 1980 figures for coal tonnage are certain to approach 40 percent.

Concomitantly, coal revenue has more than doubled between 1970 and 1978, from \$1.4 billion to \$2.971 billion. While this represents an increase from 12 to only 13.5 percent as a percentage of total revenue, this year should see it become more like 20 percent. The percentage could go higher, as the merchandise freight component declines even more and as the accelerating shift to coal, caused by the recent oil price hikes, becomes reflected in more current figures.

To dramatize this shift, for example, Burlington Northern expects that its originated coal tonnage will increase 20 percent, from its number one position of 80.2 million tons last year to over 100 million tons in 1980. This represents more than a 500 percent increase in BN's coal haulage since 1970, and over 30 percent of its revenues. The Norfolk & Western road expects coal to account for about 60 percent of its originated freight tonnage this year, compared to 40 percent or so before the recession, with coal revenues rising to comprise over 50 percent of its income.

To meet this increased demand, major coal-carrying lines have, since 1973, stepped up their capital investment programs, particularly in coal hopper orders. Burlington Northern has received 1,000 new cars and 400 locomotives in the last two years, and has slated \$1.6 billion over the next five years for facilities and equipment, in large part due to the coal surge. Family Lines has ordered 2,300 hoppers and 57 locomotives, with another \$100 million slated for equipment and road expenditures. Even the insolvent Conrail system has received 1,550 hoppers and invested \$18.4 million in track improvements on coal routes.

In part because of the steady buildup since 1973, the

railroads in general have plenty of capacity to meet coal demand in the near future. They are facing, however, some important bottlenecks that could crimp revenues. In the short term, the Environmental Protection Agency's stringent regulations on coal-fired generating plants, plus the increasing turmoil and rising costs of obtaining funds in the capital markets, have retarded completion and activation of these units.

The declining productivity of coal production—which has gone from 16 tons per man-day in 1969 to between 8 and 9 million tons per man-day now—have driven mining costs through the roof and contributed to labor unrest and lost production. Between the production cost of coal and the rail charges, the average price per ton has risen to above \$30, and in some cases above \$50. There is still relatively little capital investment in coal mining which could lower costs; coal companies are relying on their 20 percent or so idle capacity to meet demand.

Nevertheless, about 200 coal-fired generating plants are scheduled to begin electricity production during the next eight years pushing utility demands up by 60 percent in 1980 to over 850 million tons a year.

Right now, the ever-rising price of coal is still cost-effective vis-à-vis oil. But in a deteriorating U.S. economy, coal companies will be further deterred from making the necessary investments in mining equipment. And as in the recent oil price hikes, it won't be long before the cost outstrips demand.

The coal export boom

In the last year, however, overseas export of steam coal has begun to take off, and both coal companies and the railroads have visions of huge earnings from this untapped market. While export levels are still quite modest, the acceleration appears to be phenomenal.

In 1977, U.S. steam coal exports (steam coal is used for electricity generation, as opposed to metallurgical coal, which is primarily for steel making and industrial processes) totaled only 11.8 million tons (one-sixth of total U.S. coal exports). A mere 1.2 million tons were shipped overseas, with 10.6 million tons going to Canada. But last year, overseas exports doubled to 2.5 million tons; this year, steam coal shipments should rise to between 10 and 15 million tons, and could well surpass our Canadian market.

The sudden increase in U.S. steam coal exports is due to several factors. First is the combination of the recent OPEC price hikes intersecting the coming-online of new coal-fired electricity generators in both Europe and Japan.

Second is the fact that the U.S. market is perceived in some circles as a more reliable supplier than the other leading suppliers, South Africa, Australia and Poland.

South African mining has been severely disrupted by racial turmoil, while protracted labor conflicts in Australia curtailed coal shipments earlier this year.

Poland's coal exports have so far not been increased, amid rumors that increased output will remain within the East Bloc nations because of energy shortfalls there.

Finally, it is not to be excluded that Europe and Japan are moving fast to secure added coal supplies in the face of growing unrest in the Middle East that could interrupt OPEC oil flow.

The huge increase in U.S. steam coal exports can be seen in the monthly shipping figures. In the last four months of 1978, only 77,000 tons of steam coal were exported abroad; in 1979, 1.43 million tons were shipped. During the first five months of 1979, 554,000 tons were shipped, while in 1980, 3.624 million tons went overseas.

Demand and the bottlenecks

Michael Lloyd of Woolcott Research Associates estimates that European demand for coal could increase 400 percent over the next 10 to 15 years by 100 million tons from its current level of 25 million, with Japan taking another 30 to 40 million over its present 5 million tons. The question is whether that will come in large part from the United States or from other nations like Australia, Poland and South Africa. The National Coal Association is revising its export projections now, as this year's exports for all types of coal will almost certainly break 80 million tons. By 1990 the U.S. could be exporting between 130 to 150 million tons.

There is one problem.

U.S. ports are now working at capacity to get the coal out. Waiting time for colliers at Hampton Roads, Virginia—the nation's largest coal port—varies from a minimum of two weeks up to a month, at a cost of \$15,000 per day on average. At maximum, the East Coast ports might be able to load 15 million tons of steam coal this year.

Capital investment plans for the major coal ports are woefully inadequate. While a federal Interagency Task Force on coal exports is debating where to put federal funds to dredge deeper sea channels, a few companies and railroads are taking what are essentially band-aid measures to facilitate flows at levels only at or slightly above present capacity. Island Creek Coal Sales Co., for example, has said it would build a 7 million ton per year facility in Baltimore by 1982 at a cost of \$20 million. A.T. Massey Coal Co. will buy an inactive Chessie ore pier in Hampton Roads to convert it to export 9 million tons a year. At this rate, the steam coal export boom will, like Lock and Dam 26 on the Mississippi, find itself stalled in a traffic jam, with the price of its product zooming out of sight with British-style inefficiency. ■