

New York Ports and the Expanding Coal Markets

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A great amount of attention in recent port development plans has been focused on the probability of increased coal traffic. Based on this potential, various projects to inaugurate or expand coal services have been initiated at many locations throughout the United States. Recent proposed coal transportation developments at port facilities in New York State are reviewed, and the potential for increased traffic through the state is examined.

The U.S. share of the world coal market has risen steadily over the past several years along with a dramatic increase in exports of steam coal. Current projections from a variety of sources indicate the probability of continued growth in both the export trade and domestic use. It has often been noted that this coal "boom" will not achieve its full potential without major upgrading of the transportation system that serves the market. Currently, the major portion of U.S. coal shipments is handled by a few ports. Various port operators in New York State and around the United States, recognizing the potential for further market expansion, have developed plans for transshipment terminals to serve the demand.

Plans are currently under consideration for two separate terminals in New York Harbor. The Port Authority of New York and New Jersey is advancing a project that would enable it to initially handle 10 million tons/year for the export and domestic markets. The City of New York Department of Ports and Terminals has developed plans for a facility on Staten Island that would use a short slurry system to minimize environmental impacts of coal handling in an urban area. On the Great Lakes, the Port of Buffalo hopes to use its location to serve coal exports through the St. Lawrence Seaway.

At the Port of Albany on the Hudson River, a privately held Dallas, Texas, energy company has announced a plan to export up to 2 million tons/year of coal through a newly constructed facility, and the Atlantic Cement Company of Ravena, just south of Albany on the Hudson, has already used its existing conveyor system to load several vessels for export in 1981.

Since increasing use of coal has become a reality overseas, coal buyers have looked to the United States to fill gaps in supply resulting from uncertain output by more traditional producers, especially Poland. Transportation service improvements are required to meet this demand, and the ports of New York are moving to secure a share of the market.

ISSUES IN COAL TRANSPORTATION

Transporting coal for export requires a complex multimodal network linking supply centers and inland or coastal transshipment points. The capacity of the existing system has generated substantial debate in recent years. This discussion has centered on several important points.

The issue of long waiting times and high demurrage costs at primary loading ports such as Hampton Roads and Baltimore has been effectively resolved through vessel preregistration systems implemented by the railroads that operate those facilities. The long-term problem of terminal capacity has been examined closely, and some assumptions have recently been called into question. As reported in the New York Times in December 1980, it was the opinion of President Carter's Coal Export Task Force that "by 1983 at the latest there will be more than enough

[capacity] to handle any possible demand", precluding further long delays for loading.

The inability of U.S. ports to handle large coal carriers (125 000 deadweight tons or more) has been the subject of much discussion. Several bills now pending in Congress are seeking to speed up dredging of deep-draft ports by recovering at least part of the cost from local entities and revising the U.S. Army Corps of Engineers permit process. The issue of cost recovery for dredging has created a great amount of controversy and, although a consensus on the need for "fast tracking" of permits has developed, it is difficult to predict the shape of the final legislation. The present depressed market for freight carriage by sea has contributed to the cost-effectiveness of smaller panamax or handy-sized vessels, at least for the short term. Although this raises doubt about the overall cost-effectiveness of deep-draft dredging projects in this period, it is probable that these projects will be pursued due to the potential savings offered by larger vessels in a strong market. Charter rates in the bulk carrier market dropped to a two-year low in 1981, and it appears that there will be little improvement in 1982. Even significant growth in the coal trade is not likely to absorb the excess tonnage. It was recently noted that orders placed for new bulk carriers in the period July-September 1981 were almost entirely for vessels of 70 000 deadweight tons or less (1). Although the market has appeared to bottom out, significant new carrying capacity to be added over the next three years suggests that the situation (for carriers) may worsen before it improves.

The outlook for the railroads is somewhat more optimistic. The rail transportation service required for even a moderate-sized export facility places substantial demands on carriers. Operation of a 10 million-ton/year facility would require three unit trains of 100 cars/day. Since unloading time is estimated at 3-4 h, operation around the clock may be necessary.

Examination of the present coal-handling market shows the obvious--that ports that enjoy proximity to supply sources currently handle the greatest percentage of traffic. Hampton Roads alone accounted for almost 60 percent of U.S. export coal traffic in 1980. The projected New York facilities are planning to serve several eastern supply centers, notably western Pennsylvania and northern West Virginia. Although the land haul to projected New York facilities may be greater in some cases, it is believed that proximity to the market and efficient handling will provide competitive overall distribution costs, especially for export. New York enjoys excellent rail access, and no major problems with unit train operations are anticipated. The majority of trackage in New York State is controlled by the Consolidated Rail Corporation (Conrail), and connection with major coal-hauling lines is possible at a number of points. The future of Conrail will be effectively determined by two profitability tests in 1983. If these are passed, as is expected, the line must be sold as an entity by June 1984. Conrail has been extremely supportive of the various coal port developments in New York, since the potential for increased revenue is readily apparent.

The impact of rail carrier deregulation has been the subject of much debate since passage of the

original legislation in October 1980. A petition by the Norfolk and Western Railway to exempt East and Gulf Coast coal traffic from regulation could result in higher rates, but railroad officials maintain that prices will not increase sufficiently to affect the competitiveness of U.S. coal on the world market. The proposal elicited a strong reaction from shippers, who feel that a favorable ruling could have far-reaching effects on the position of U.S. coal, already beset by high inland transportation costs.

Environmental problems associated with unit train and coal terminal operation are not expected to be an overriding concern except in the case of the proposed New York City terminal. Impacts on environmental quality include air pollution resulting from locomotive emissions and fugitive dust, noise from railcar operations and ship loading, as well as possible water pollution from coal pile runoff. It is expected that any terminal design will strive to minimize these negative effects. An evaluation of the impacts of increased coal movements in New York State was recently completed for the New York State Department of Environmental Conservation (2). This study concluded that moderate impacts on environmental quality could be anticipated but significant negative effects were not envisioned.

PLANNED COAL TERMINAL DEVELOPMENTS

New York and New Jersey

The Port Authority of New York and New Jersey has emerged as a leading proponent of coal transportation development in New York State. The initial concept for a coal transshipment terminal located in New York Harbor has been discussed since the late 1970s, and activity has stepped up in recent months.

Cargo volumes at North Atlantic ports such as New York have been decreasing, and it is believed that the surge in demand for coal exports represents an opportunity to regain some of these lost revenues. Port Authority officials have pointed out that the Port of New York and New Jersey offers several potential advantages over competitors for the coal export trade. The harbor can be dredged to a depth of 60 ft for an estimated \$140 million compared with an estimated \$417 million at Hampton Roads. A significant amount of land is available with direct rail access from three major coal-hauling lines. Finally, the port's proximity to European markets could result in significant savings to shippers, especially to Northern European customers. The concept of this project has received the endorsement of the States of New York and New Jersey as well as the City of New York.

In July of last year, the Port Authority received the phase 1 final report of the engineering and economic study for a coal transshipment facility in New York Harbor. Initial capacity of the planned terminal would be 10 million tons/year, with possible future expansion to 20 million tons/year. The coal will arrive in unit trains from eastern supply regions and be conveyed to a ground storage area with a planned capacity of 2 million tons. The project cost is estimated at approximately \$125 million for the preferred alternative on the New Jersey side of the lower Hudson River. The Port Authority recently completed acquisition of the proposed terminal site, and further studies are progressing.

The New York City Department of Ports and Terminals has proposed a plan for a 20 million-ton/year facility at Stapleton, Staten Island. The Stapleton site was initially considered by the Port Authority, but the environmental problems associated with unit train operation outweighed the advantage of excel-

lent deepwater access. The City proposal envisions coal storage at a rail yard on the west side of Staten Island and mixing to form a slurry. The coal would be transported via a dual pipeline system approximately 8 miles across the island to Stapleton, where it would be dewatered and loaded. The City has estimated the total cost of this facility at \$100-150 million and expects private capital to finance the project. Since the Chessie System controls rail access to Staten Island, negotiation of a joint rate with Conrail will be necessary. As with the Port Authority proposal the concept of this terminal has received wide political endorsement; however, some concern about impacts on the community has been raised by residents in the area, and environmental compatibility is being stressed in design efforts.

Port of Albany

The Port of Albany is an inland tidewater port located on the Hudson River approximately 125 nautical miles north of New York City. The Hudson River is maintained at a depth of 32 ft by the Corps of Engineers as far north as Albany.

In March 1981, the Albany Port District Commission was approached by the New Amsterdam Coal Company of Dallas, Texas, concerning the possibility of constructing and operating a coal export terminal at Albany. New Amsterdam Coal is a subsidiary of R.V. Lynch and Company, a 15-year-old, privately held energy company. After initial meetings, New Amsterdam Coal entered into an agreement to lease 20 acres of port land with an option to expand to 35 acres. The site is located on the east (Rensselaer) side of the Hudson. The company indicated that it chose Albany because of the lack of congestion, good access, and available land.

Under the New Amsterdam plan, coal will move via Conrail from producing districts in western Pennsylvania and northern West Virginia. The Albany terminal would maintain an initial stockpile of 100 000 to 150 000 tons, with possible expansion to 500 000 tons of storage. A ship loading capacity of 1000 tons/h is planned. The company plans to invest \$6 million to upgrade Conrail service and complete construction of the coal-handling facility and eventually to provide \$0.50/ton in added revenues to the Port District.

After some initial delays in receiving environmental and dredging permits, it appears that plans are progressing. New Amsterdam Coal has retained a major New York consulting firm to complete an engineering study for the proposed terminal. The company hopes to be in operation by 1983.

Atlantic Cement Company

The Atlantic Cement Company facility in Ravena, New York, is located just south of Albany, about 110 nautical miles north of New York City. Since 1962, the company has operated an integrated cement production operation that uses the Hudson River to distribute products throughout the Eastern Seaboard. Cement was transported to vessels via a mile-long conveyor system and, through construction of a short feeder system, the company now uses that system to load coal for export. Since the spring of 1981, seven ships destined for markets in the Caribbean and Europe have been handled in this manner. The company has recently supplemented its coal sales staff to further develop this potential but does not plan significant expansion of service without long-term buyer commitments.

Port of Buffalo

The Port of Buffalo is located on the eastern end of Lake Erie, about 1500 nautical miles from the mouth of the St. Lawrence River. The port facilities are owned and operated by the Niagara Frontier Transportation Authority (NFTA). NFTA has been interested in developing a coal terminal at Buffalo since the mid-1970s. The possibility of transporting western coal east via the Great Lakes and the potential for increased demand by utilities in the region have created a great deal of interest in a Buffalo coal terminal. The feasibility of such a facility has been investigated in a number of consultant studies. Initial questions concerning the economics of using western coal in New York State were raised in a market study of the State's barge canal system conducted for the New York State Department of Transportation in 1979 (3). The study found that "no large-volume shipments of western coal are anticipated...and notwithstanding the resultant transport cost savings eastern coal remains the preferred fuel supply option for new coal fired utility installations in upstate New York." In November 1979, a feasibility study of the bulk terminal proposal was completed for NFTA (4). This study concluded that "given the current economic and regulatory climate, there does not appear to be sufficient demand to justify construction of a bulk handling transshipment facility at the Port of Buffalo." More recently, a study conducted for the Power Authority of the State of New York (5) concluded that "the long-term potential for a large coal transshipment port does not look attractive."

Because of the increasing volume of exports and crowded conditions at some Atlantic Coast ports, interest began to focus on the need for alternative export routes, including the Great Lakes-St. Lawrence Seaway System. An examination of Great Lakes coal-handling capacity and export coal potential completed by the U.S. Maritime Administration in 1980 (6) concluded that "if world coal demand continues to increase and congestion continues at East Coast ports, the Great Lakes-St. Lawrence Route will be a competitive alternative." The study further concluded that laker feeder service to ocean vessels of 100 000 deadweight tons is the most competitive route and that the ability to load vessels of this size at Quebec City is an advantage over using East Coast ports. One example of this occurred in August 1981, when six Canada Steamship self-unloaders transferred 160 000 tons of Ohio coal at Sept Isles in the Gulf of St. Lawrence. This was the largest shipment of coal ever to leave North America on one ship.

The Port of Buffalo is served by several rail lines and currently has two berths and a conveyor system capable of loading coal into 1000-ft lakers or seaway-sized ocean vessels. Loading is accomplished with a new Kolberg mobile loading system that has a loading capacity of 2200 tons/h. The port has set aside a 210-acre site with a 3 million-ton storage capacity for bulk cargo. In addition, the facility can handle up to 100 railcars and 10 barges. NFTA believes that, when fully operational, the facility will be able to handle up to 3 million tons/year.

COAL MARKET OUTLOOK

Export

Optimistic projections notwithstanding, a variety of factors will affect the growth of U.S. coal exports in the near term. The National Coal Association has expressed fear that current economic conditions,

combined with a decline in oil prices, may put a damper on the short-term growth in use of U.S. coal. In general, the United States is recognized as a reasonably dependable supplier due to abundant reserves and overall political stability. Foreign coal buyers, however, have generally been unwilling to enter into long-term contracts without accompanying improvements in port facilities. Current coal prices in the United States are 20-30 percent higher than those of our closest competitors, Australia and South Africa. The disparity results from higher labor costs, longer land-haul distance, and, for some markets, longer ocean distance. Labor costs are not likely to decline due to a strong union and the higher recovery costs, especially for eastern coal. Planned improvements in transportation efficiency may have some positive effect on the overall price competitiveness of U.S. coal in the world market.

Predictions of total coal exports have been revised downward in recent months. Despite the optimistic projections of President Carter's Coal Export Task Force, a consensus seems to be forming among industry analysts that the U.S. share of the world coal trade will grow at a rate somewhat slower than initially anticipated. Coal consumption in Europe has stagnated somewhat due to the current level of stockpiles, increased availability of competitive supplies, declining oil prices, and general recession within the European Economic Community (EEC). Options put forth by a member of President Reagan's Coal Interagency Working Group indicate that overall U.S. exports to Europe will fluctuate more widely than those of other suppliers. Recent production problems experienced in Poland, a traditional supplier to the EEC, may open some additional markets to U.S. suppliers. It appears likely that as stockpiles are reduced the United States will probably get the bulk of Europe's incremental demand. The United States is currently seen as a "swing" supplier to this market.

A report prepared by the Office of Technology Assessment (7) recognizes the difficulty of accurately estimating the U.S. share of the steam coal market in the next 20 years. In large measure, the U.S. share will be determined by problems experienced by competitors in meeting the demand and the ability of the industry to surmount the problems inherent in the U.S. production-distribution system. Another recent study (8) concludes that, whereas market expansion can be anticipated, the rate, timing, and magnitude of this growth will be effectively determined as much by corporate strategies as by national energy policy.

Domestic

Although a large increase in domestic coal use has been forecast since the mid-1970s, intrinsic problems in the utility industry have prevented realization of this objective. The energy policy put forth by the Reagan Administration has emphasized the importance of free-market mechanisms to meet potential energy crises. Utilities have been hard-pressed to finance voluntary conversions due to a leveling of demand, rising fuel costs, and depressed stock prices. It is not likely that direct subsidies will come about and, with no large-scale program of conversions, it appears that domestic coal use will grow much slower than initially anticipated.

Revision of the Clean Air Act was expected to be one of the controversial issues of the 1981 congressional session. Without congressional action, the current version, enacted in 1970, will remain in effect. Progress has been extremely slow. As of late 1981, a number of proposed revisions had been

offered but a consensus has yet to emerge. Large-scale relaxation of emissions standards does not appear likely at this time.

Within New York State, several utilities are examining the feasibility of conversion to coal use. Consolidated Edison of New York has extended a test burn of higher-sulfur fuel oil as a prelude to conversion at two facilities in New York City. Although real progress toward conversion has been described as "glacial", regional growth potential for this segment of the coal market is significant. If scheduled conversions are carried out, an increase in coal shipments of up to 10 million tons/year is possible. After a steady decline in the 1970s, coal consumption in New York State has begun to increase slowly. Few problems are anticipated in serving the transportation requirements of this market.

CONCLUSIONS

Proponents of coal terminals in New York State believe that a significant amount of traffic can be diverted to the proposed facilities and that total distribution costs would be competitive with other East Coast ports. Availability of land, good access by major rail carriers, proximity to the market, and, in the case of New York Harbor, a dredging cost significantly lower than dredging costs for competitor ports will, it is believed, contribute to the economic viability of the proposed terminals.

Planned project capacities at New York State ports are given below:

Port	Capacity (000 000 tons/year)		Projected Start-Up Date
	Initial	Storage	
New York/New Jersey	10	2	1985
New York City	10	1	1985-1986
Albany	2	0.15	1983
Buffalo	1	3	1984
Hudson River	1	0.10	1981
Total	23.5	6.25	

The growth in coal use has been hailed as a means by which to achieve a variety of national objec-

tives. The ports of New York expect to gain a share of the market and anticipate that the goals of regional development may be served as well.

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