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## L Summary

# 1. Summary

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Considerable public controversy currently surrounds legislative proposals at both the Federal and State levels that would grant the power of eminent domain for right-of-way acquisition to coal slurry pipeline enterprises and impose certain restrictions and requirements upon their activities. Against this background, the Chairmen of the Senate Committee on Energy and Natural Resources, the Senate Committee on Commerce, Science, and Transportation, and the House Committee on Interstate and Foreign Commerce, requested this assessment of the potential economic, environmental, and social implications of coal slurry pipeline development. The analysis presented here is intended to contribute to the information available to Congress on which to base any determination concerning Federal eminent domain legislation for coal slurry pipelines, and to provide an analytical framework against which a public agency might evaluate the potential effects on the economy, society, and environment of specific individual pipeline proposals and their alternatives.

Four interrelated studies provide a basis for systematically evaluating the transport of coal by pipeline compared to railroad. The first establishes hypothetical baseline forecasts to the year 2000 of volumes of utility steam coal to be transported from nine producing regions to each consuming State based on demand growth, environmental regulation, and coal-use assumptions. The second study provides rail and pipeline cost estimates and plausible market scenarios, which have been used to predict the possible impact of slurry pipeline development on the total social cost of electric power, the cost and quality of service in the railroad industry, employment levels, and other economic measures. A third investigation identifies and evaluates the water resource, environmental and social impacts of transporting hypothetical quantities of coal by pipeline as contrasted with the corresponding

effects of moving the same amounts by rail. The fourth examines the legal and regulatory provisions relevant to rail and pipeline competition, water rights, environmental protection, and eminent domain. Finally, the coal volume forecasts have been subjected to a sensitivity analysis to determine what effect the findings of the economic study might have on the original projections.

Major findings of the assessment are summarized below. They should be read with the understanding that they are based upon simplifying assumptions and considerable speculation about the future.

- Based on the analysis performed in this assessment, coal slurry pipelines do represent under some specific circumstances the least costly available means for transporting coal measured in economic terms. Whether this is true of any particular pipeline can only be determined by detailed evaluation of the conditions specific to the route.
- The current regulatory framework does not guarantee that choices between slurry pipelines and rail will necessarily minimize the cost to society of transporting coal. With the power of eminent domain, coal pipelines would enjoy significant regulatory advantages over railroads. These advantages would stem from the differences between regulated tariffs and cost of service, the ability of pipelines to serve selected customers, and the prohibition of long-term contracts between railroads and their shippers.
- The development of a substantial slurry pipeline industry is likely to diminish the growth in future revenues of competing railroads, primarily in the West, unless rates paid by remaining shippers are adjusted to compensate. However, average

rail tariffs, adjusted for inflation, are declining and are likely to continue to do so for the next 20 years based on the market and cost assumptions of the analysis. Even if railroads were to respond to pipeline competition by modifying their rate structure to preserve the net income they would otherwise have realized without pipelines, the rate of decline in tariffs would be lessened but not reversed.

- The introduction of coal slurry pipelines is not likely to affect materially the rate of coal resource development and use on a national scale. It may, however, affect the regional pattern of coal mining and distribution in such a way as to expand the use of western coal to greater distances from this area of origin.
- Pipelines employ less labor than does rail over their respective useful lives, but if a substantial pipelines industry were to develop, enough people would probably be employed in construction and supplying industries to offset cumulative employment impacts in the rail industry for the rest of the century. Since railroad employment may decline due to productivity improvements before the year 1990 in any event, job losses due to pipeline competition could contribute to layoffs as opposed to reduced rates of hiring in the railroad industry during that period. In addition, agriculture may be affected locally by future water availability impacts of slurry pipelines, as well as by the cost and quality of service by railroads. Railroads can also have direct adverse impacts on agriculture in the form of possible disruption of ranching operations.
- Sufficient unused quantities of suitable water are physically present although not necessarily legally available for the operation of several slurry pipelines from western coal-producing areas. Substantial institutional barriers impede in voluntary displacement of present water rights, but other possible future uses of remaining supplies could be foreclosed by pipeline development. When levels of use exceed users' rights, as is the case during years of relative abundance of water, new appropriations may also displace present uses.
- Under the prior appropriation system for water allocation in many Western States, slurry pipelines, like any new applications of water, are accorded a lower priority relative to existing rights. They therefore may not be able to acquire water even if they were to represent a more economically productive use. The Federal Government has substantial power to control water resource allocation for pipelines, notwithstanding State provisions, if it should choose to exercise it. Even without an explicit choice to exercise that power, Federal certification of a pipeline project based on a finding that it served the public interest could supersede State water allocation authority under some circumstances.
- The environmental choice between coal pipelines as opposed to increased rail traffic primarily involves weighing the water use and temporary construction activity impacts of slurry pipelines against the noise, land-use disruption, railroad crossing accidents, and inconvenience resulting from increased train traffic. All other impacts examined are relatively insignificant or roughly equivalent for both modes.
- Several Federal statutes serve to protect the environment against potential adverse impacts of both railroads and pipelines, as do a variety of Federal and State laws and programs designed to improve safety at rail-highway grade crossings, usually in part at public expense. Federal environmental impact statements, however, are generally not required for increases in rail traffic, as opposed to extensions in routes. They are also not necessarily required for slurry pipeline construction, since building such a pipeline is possible at present without major Federal action. Usually, however, Federal or State environmental statements will be necessary

for pipelines, especially if Federal certification is required as a condition for the power of eminent domain.

- Not all States have statutes granting the power of eminent domain to slurry pipelines. Those that do require that the pipelines serve a public purpose within the State, and more recent statutes limit use of State water for pipelines and subject them to State regulation as common carriers.

Ž The development of a coal slurry pipeline industry would be possible in the absence of the power of eminent domain at the Federal level. All other pipeline systems except natural gas were built largely with State eminent domain authority. On the other hand, Federal legislation in this area would facilitate coal slurry pipeline development by removing the need to direct routes, possibly at prohibitive cost, around States without eminent domain provisions, and by eliminating the requirement that the public in each State along a pipeline route benefit from the operation. Federal preemption, however, would limit States' powers to influence the form of Slurry pipeline development.

A judgment concerning the desirability of slurry pipelines as a form of coal transportation will depend on the subjective weights that one assigns to the factors discussed above. The overall issue, however, extends beyond the question of whether coal slurry pipeline development by itself would have a favorable impact on society. The judgment will therefore also depend on one's views concerning broader problems, of which the coal slurry pipeline controversy is only one aspect. These include: 1 ) the current railroad regulatory structure, 2) the present systems for allocating water resources in the West, and 3) the availability of mechanisms by which conflicting regional differences over energy development can be reconciled.

In the absence of eminent domain provisions at the Federal or State level, coal slurry

pipelines are less likely than otherwise to compete successfully with established railroads. On the other hand, if Federal eminent domain legislation were passed without provisions for equalizing the regulatory restrictions on each mode, pipelines would enjoy significant advantages over railroads. One lies in the interstate Commerce Commission's prohibition of long-term contracts with shippers in the rail industry. Such contracts, if permitted, could facilitate investment in specific improvements to provide more economical service when a shipper is willing to be bound by rate and volume provisions in return. Financing of pipeline enterprises would not be possible without long-term contractual arrangements, probably containing escalation clauses to cover unforeseen cost increases. Also, common carrier obligations of railroads to provide uneconomical service are probably more stringent than they would be for coal slurry pipelines. Although the situation may change as a result of the Rail Revitalization and Regulatory Reform Act, the allowed return on rail investment is lower than what is permitted for pipelines now carrying other commodities. In this context, however, slurry pipelines simply represent another competing mode of transportation to be considered in the larger debate concerning the merits of regulatory reform for the railroad industry.

The second larger question is related to the allocation of western water resources among competing uses. If everyone agreed that the present institutional mechanisms always led to the best choices, a significant area of contention would be absent from the controversy over coal slurry pipelines and over many other forms of energy resource development as well. Mine-mouth power generation and coal gasification and liquefaction, for example, require even more water than do slurry pipelines to process a given amount of coal. Some residents of western coal-producing States therefore see expansion of this type of activity as a potential threat to their limited water supplies. The prior appropriation system of water rights, on the other hand, subordinates new uses to present ones, making water acquisition

for energy development difficult. Improving the process by which water-use priorities are established could therefore eliminate some of the conflict over slurry pipelines.

Finally, other elements of the dispute over coal slurry pipelines reflect conflicting regional interests regarding coal development generally. Producing areas are expected to suf-

fer adverse impacts, like the inconvenience associated with expanded train traffic or increased competition for water, while the benefits accrue to other parts of the Nation in the form of lower electric rates or reduced dependence on gas or oil. In this respect, coal slurry pipelines represent only one of the many factors in the balance Congress must strike as it fashions future energy legislation.