

**RAIL ENERGY TRANSPORTATION ADVISORY COMMITTEE**  
**Capacity Planning Subcommittee**

**WHITE PAPER**  
**March 4, 2009**

**A. Subcommittee Members**

Henry Rupert – CSX Transportation, Subcommittee Chair  
William Berg – Dairyland Power Cooperative  
Steve Bobb – BNSF Ry. Co.  
Sameer Gaur – GE Equipment Services  
Daryl Haack – Farmer  
Bob Hulick – TrinityRail  
Ed McKechnie – WATCO Company  
Jim Redding – Aventine Renewable Energy  
Dan Sabin – Iowa Northern Ry. Co.  
Jeff Wallace – Southern Company Generation

**B. RETAC Mission Statement** – RETAC was formed to provide advice and guidance to the Surface Transportation Board, and to serve as a forum for discussion of emerging issues regarding the transportation by rail of energy resources, particularly, but not necessarily limited to, coal, ethanol, and other biofuels. The purpose is to continue discussions regarding issues such as rail performance, capacity constraints, infrastructure planning and development, and effective coordination among suppliers, carriers, and users of energy resources. The goal and scope of this subcommittee falls within the RETAC mission statement.

**C. Subcommittee Goal** – To examine energy supply chain capacity issues that impact the reliability of energy product delivery, primarily coal and ethanol, and develop findings and recommendations to the STB.

**Scope** –“Advocating approaches to having sufficient physical infrastructure in place and available to move energy resources when and where needed.”

It is noted that having “sufficient physical infrastructure” or capacity, is impacted by operating practices, maintenance, productivity initiatives and commercial relationships. As capacity is affected by the practices of shippers and receivers involved in the supply chain, significant economic trade-offs arise when considering solutions to capacity issues. Those issues will be examined in the Best Practices Subcommittee and are outside of the scope of this Subcommittee.

**D. Specific Issues Discussed**

1. How can large investments for energy source development, rail infrastructure, locomotives and rolling stock be made when the political and regulatory climate create so much uncertainty regarding the future use of coal as a primary fuel source in electric generation and renewable fuels as an additional energy source ?

2. What is the nature and extent of the reserve capacity that railroads need in order to meet surges in volume and/or geographic and modal changes in sourcing regions for domestic energy transportation needs?

a) The need for flexibility to shift between coal sourcing regions is increasing as electric power producers seek the ability to respond to dynamic energy markets to ensure electricity can be delivered cleanly and at the lowest possible cost.

Likewise, alternative sources of energy introduce greater complexities in geographic and modal shifts for transportation providers.

b) The ability of railroads to provide flexibility is hindered by the time needed to develop such capacity, as well as by uncertainty in the return on investment due to the significant cost of capacity investment and uncertain revenue streams.

3. What mechanism is necessary to ensure that investments in capacity are made where and when needed?

#### **E. Processes to Address the Issue**

1. The subcommittee is open to all members of RETAC.
2. The Subcommittee first met in May at the Chicago Command Center which manages rail flows through the Chicago Terminal. The meeting began with an overview of the prior capacity presentation to RETAC, continued as a round-table discussion and resulted in a list of broad industry issues and opportunities involving capacity.
3. The co-chairs held a conference call in early August with the Subcommittee chairs to discuss the progress and scope of each Subcommittee. The scope of the capacity Subcommittee was changed as noted above.
4. The Subcommittee met in August at the CSXT Huntington Division office. A few participants took a tour of CSXT's Danville Yard which supports coal train operations in southern West Virginia. The meeting focused on the gap between the changing needs of shippers and receivers, including changes in sourcing and volume surges, and the ability of the railroads to respond given the nature of railroading and the magnitude of funding needed to meet those needs and make an adequate economic return. The group heard presentations regarding the Short-Line Tax Credit and the Cambridge Study commissioned by the AAR.
5. The Subcommittee met in October at Southern Company's Scherer Plant in Macon, GA. The meeting included a tour of the rail unloading system and overview of plant operations.
6. The Subcommittee met in St. Louis in February 2009 to finalize the white paper draft.
7. The group agrees face-to-face meetings are productive and visiting operating sites is beneficial.

#### **F. Status of Discussions and Consensus Results – see attached**

## RETAC CAPACITY SUBCOMMITTEE – Issues and recommendations

### **Specific Issue #1 – Investment risk and the energy supply chain**

How can large investments for energy source development, rail infrastructure, locomotives and rolling stock be made when the political and regulatory climate create so much uncertainty regarding the future use of coal as a primary fuel source in electric generation and renewable fuels as a additional energy source?

#### **Discussion**

Mining, railroad and power generation industries are very capital intensive industries which require long lead times to finance and complete projects for capacity expansion and infrastructure improvement.

Growing public, legislative, and regulatory concerns regarding environmental and climate change issues have resulted in a patchwork of complex state and regional initiatives. This patchwork of existing, pending, and potential new regulation and legislation is very complicated and has created much uncertainty surrounding the future demand for coal as a generation fuel source in the United States. This makes it very difficult for mining, railroad, and power generation industries to confidently plan for and invest in significant capacity and infrastructure expansion due to the risk of stranded investment costs.

A clear and concise national energy policy needs to be established in order to improve the ability of these industries to accurately forecast the long term demand for coal and renewable energy, which in turn should allow necessary capacity and infrastructure expansion to occur with much less potential for significant stranded investment costs.

#### **Specific Recommendations to the STB**

- STB needs to advocate and educate policy makers on the need for a defined, consistent energy policy.
- Consider continuing a forum such as RETAC that facilitates industry discussions to improve long term demand forecasts, specifically as related to ensuring adequate investment in the supply chain for energy products.

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### **Specific Issue #2 – The increasing need for flexibility in a highly capitalized infrastructure**

What is the nature and extent of the reserve capacity that railroads need in order to meet surges in volume and/or geographic and modal changes in sourcing regions for domestic energy transportation needs?

a) The need for flexibility to shift between coal sourcing regions is increasing as electric power producers seek the ability to respond to dynamic energy markets to ensure electricity can be delivered cleanly and at the lowest possible cost. Likewise, alternative sources of energy introduce greater complexities in geographic and modal shifts for transportation providers.

#### **Discussion**

Energy producers seek the ability to be able to switch between fuel types and regions swiftly to ensure electricity can be produced in an environmentally compliant and low cost way. On the other hand, railroads cannot always expand or shift capacity and resources quickly enough to meet such changes. The pressure for these shifts will only increase with market volatility, environmental issues and continued globalization of the economy.

Volatility in global and domestic energy markets has increased significantly in the past decade. Although many factors can cause volatility in prices, some of this certainly could be linked directly to the current status of capacity and infrastructure expansion due to issues previously discussed (in specific issue #1).

The volatility is not only in overall prices, but also in the relative price differences between coal types from different geographic regions of the United States (e.g. eastern coal vs. PRB). Additionally, price differences between various fuel types have also become much more volatile (e.g. coal vs. natural gas). Differences by region or fuel type can more and more be attributed to the relative chemical/environmental makeup of the fuel (e.g., sulfur or carbon content). These factors can create swings in the total demand for shipping volumes and also create changes in regional shipping patterns.

The evolution of alternative fuels such as wind and cellulose biofuels will add to the complexities of the supply chain. Regional sourcing of feed stocks from more localized production will alter traditional traffic flows while incentives for more renewable fuels and disincentives against the greater use of coal will encourage new commercial markets for use of forest and crop waste and quick-growth grasses. Incentives need to be provided to handle the consequences of these changing conditions.

### **Specific Recommendations to the STB**

- Promote the development of best practices designed to improve flexibility and to minimize supply chain cost and to forestall disruptions through better coordination of operations planning and forecasting.
- Promote the development of supply chain monitoring and reporting of systemic constraints and other factors that could significantly disrupt the transportation system and/or energy supply chain, resulting in changes to long term forecasts.
- Specifically identify constraints or weak points with potential to create choke points in the energy supply chain.
- STB should continue supporting a mechanism such as RETAC to promote a dialogue of issues within the energy industry supply chain.

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### **Specific Issue #2.b**

b) The ability of railroads to provide flexibility is hindered by the time needed to develop such capacity, as well as by uncertainty in the return on investment due to the significant cost of capacity investment and uncertain revenue streams.

### **Discussion**

Significant changes to existing transportation flows and/or new transportation demand can stress the rail network and impact the quality of service. Examples include the recent surge in coal exports and the flow of ethanol into gasoline blending locations that typically have not unloaded large volumes of rail cars.

The amount of reserve capacity railroads are carrying to meet such surges or shifts is not necessarily easy to measure, nor is it widely communicated to or well understood by all who might be using the rail system. An electric utility system is required to carry a very specific and well defined amount of reserve capacity. Railroads are not required to do so, and furthermore, unlike an electric utility that moves a single product on their system (electric power), railroads must consider demand and capacity needs of multiple products. Further, most electric utilities may include reserve capacity in their rate base – and earn an allowable rate of return on that reserve capacity – provided it is approved as used and useful. Railroads, on the other hand, can earn returns on investments only when (or if) the investment is actually used to handle freight that would not otherwise have been moved. It is not clear if/how rail capacity planning and actual rail system operations should differentiate between energy products and other competing rail traffic.

An investment tax credit could potentially result in more rail capacity and infrastructure expansion than would otherwise have been the case. Such investment might be beneficial if it creates additional capacity to provide energy producers, shippers, and railroads the flexibility to shift sourcing regions or increase volumes. As long as the energy consumer can benefit from such changes, and the tax credit does not simply replace railroad investment that would have taken place anyway, then this potentially seems to be good public policy.

## Specific Recommendations to the STB

- Develop methodologies to ensure STB regulatory action supports adequate transportation capacity to respond to reasonable changes in demand or source regions.
- Facilitate methodologies within the energy supply chain to determine what level and location of reserve transportation capacity is reasonably likely to be required and would be economically justified to avoid the inherent risk of not having adequate capacity to respond to reasonable changes in demand or source regions.
- Promote longer term policies that allow the railroads to earn sufficient revenues to permit them to build up to the reasonable reserve target levels

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## Specific Issue #3 Bridging the investment gap

What mechanism is necessary to ensure that investments in capacity are made where and when needed?

### Discussion

Forecasts of population and economic growth, if realized, will potentially strain the nation's transportation infrastructure. In fact, some estimates suggest that the rail industry will grow 67% by the year 2020. Therefore, railroads must invest today to meet tomorrow's transportation and energy needs.

A railroad's capital budget typically consists of expenditures for track maintenance (rail, ties, ballast and bridges), locomotives, rolling stock (railcars of various types), technology and capacity. Capacity expenditures are directly related to infrastructure projects that increase the number of trains that can operate safely over a particular segment of railroad over a given period of time. Candidate projects are determined by performing choke point analyses, an operations research technique that models traffic flows and density. The model reduces the number of trains that could theoretically operate by a predetermined factor to ensure that when delays or breakdowns occur, the system can recover in a reasonable amount of time. When railroads operate above capacity, the recovery period is long and traffic disruptions result.

Typically, capacity projects are evaluated independently and generally must exceed a hurdle rate of return to be considered by a railroad. A priority list is developed and the number of projects approved depends on available capital dollars. Each year, several capacity projects remain on the drawing board.

Capacity planning and choke point analyses are highly dependent on volume projections provided to railroads by customers. Broader market indicators and independent assessments are also used to project changes in volume. An example would be population growth and changing demographics that impact consumer or industrial activity.

A potential step is the **Freight Rail Infrastructure Capacity Expansion Act of 2009 (FRICEA)** which would amend the Internal Revenue Code to allow a tax credit of 25% on the cost of new qualified freight rail infrastructure property and qualified locomotive property. The bill was referred to the House Ways and Means Committee in January 2009

Railroads view the bill as a step to improve the capacity of the overall network by advancing projects that would have otherwise been delayed or never approved. However, many customers expressed the need to see direct benefit from capacity investments and to hold railroads and other tax credit recipients accountable for ensuring that qualifying investments meet the test of adding capacity that would have not otherwise been completed.

The consensus view of the Subcommittee is that:

- RETAC members agree that additional investment is needed and that FRIECA could lead to increased investments and capital spending.
- In general, shippers do not oppose the tax credit.
- Shippers would be more willing to provide support for the legislation with more assurance that qualifying investments actually increase capacity beyond that which would have otherwise occurred and do so in such a way as to equitably distribute the benefits of the increased capacity.
- Many regulated electric utilities have the ability to earn authorized rates of return on investment in physical assets, and can meet their mandated reserve requirements by investing in and adding needed infrastructure. Railroads and other private enterprises, however, may require assistance to bridge the financial gap and investment risk.

#### **Specific Recommendations to the STB**

- RETAC needs to emphasize that the effectiveness of the energy supply chain, rail in particular, in meeting the needs of energy consumers is dependent on commitments from users that support the necessary investments.
- RETAC needs to develop a practical economic view of the gap between the perceived needs of the energy market and the amount of infrastructure investment necessary to meet those needs.