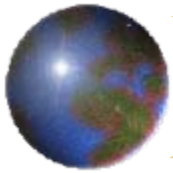


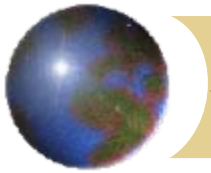
Best Practices Sub-committee

RETAC Update March 4, 2009



Best Practices Sub-committee Members

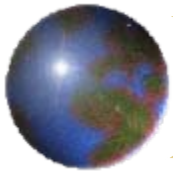
- ❑ Susan Arigoni, Xcel Energy, Inc.
- ❑ Alan Shaw, Norfolk Southern RR
- ❑ Kent Smith, Arch Coal
- ❑ David Rohal, RailAmerica
- ❑ Henry Rupert, CSX Transportation



Best Practices Sub-committee Goal

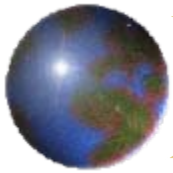
The goal of the Best Practices Sub-committee is to identify best practices in the energy supply chain that promote the efficient and reliable delivery of energy resources.

- Best Practice: An activity, process or investment that results in improved reliability, lower operating expense, increased productivity or lower risk for the supply chain.



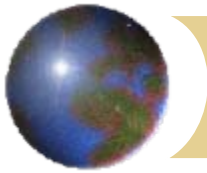
Best Practices Sub-committee

The current condition of the supply chain is sub-optimal because a common understanding of business practices between participants is not shared, and the benefits across the supply chain are not recognized.



Best Practices Sub-committee Process

- Develop common understanding
 - Scope of the supply chain
 - Terms
- Defined current perspective of producers, railroads and receivers and identified best practices for each supply chain participant
 - Developed a model that portrays best practices and sub-optimal practices of the supply chain
- Developed broad categories that apply to all participants
- Identified strengths, weaknesses, opportunities and threats



Energy Supply Chain Model

Increase

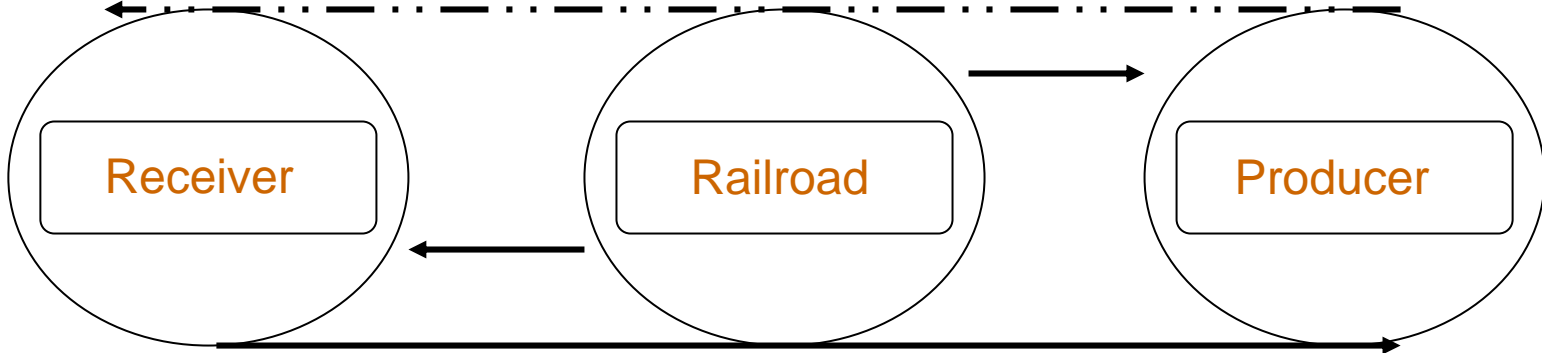
Best Practices

- Balanced purchasing
- Adequate stockpiles
- Unload upon arrival
- Diversified supply
- Employ strong traffic team
- Preventative maintenance
- Communication-lead time for coal sourcing shifts

- Supply/demand balance
- Sufficient resources
- Good execution (crews)
- Ratable shipments
- Maximize slots
- Efficient scheduled network

- Balance production and sales
- Loading on arrival 24/7
- Computerized batch weigh
- Adequate stockpiles at mine

Reliability



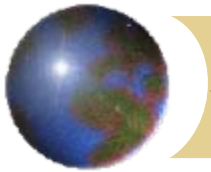
- Coal not available
- Spikes in demand
- Shifting coal sources
- Forced outages
- Limited unloading schedules
- Unloading equipment breakdowns

- Scheduling conflicts
- Source change/lane shift
- Lane congestion
- Mechanical breakdowns
- Curfews
- Interchange coordination

- Production problems
- Staging limitations
- Coal quality deviations
- Coal availability

Decrease

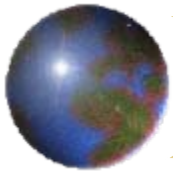
Problems



Developed Broad Categories That Apply to All Participants

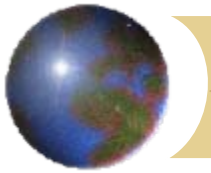
Efficient and reliable delivery of energy resources can be promoted by focusing on best practices in the following areas:

- Physical Infrastructure
- Communications & Tactical Execution
- Operating Practices
- Commercial Practices



Physical Infrastructure Best Practices

<i>Supply Chain Participant</i>	<i>Physical Infrastructure Best Practices</i>
Receiver	Adequate space for stockpile
Receiver	Unload upon arrival
Railroad	Supply/demand balance
Railroad	Maximize slots
Produceer	Computerized batch weigh
Produceer	Loading on arrival 24/7
Produceer	Adequate pile or uncovered coal at mine



Physical Infrastructure SWOT

Helpful

Harmful

Strengths:

Weaknesses:

Internal
 Shared focus on reliability
 Sourcing flexibility afforded by rail network
 US coal reserves

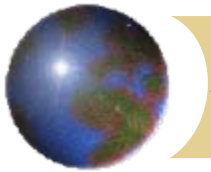
Older inefficient operations
 Fixed Assets limit ability to quickly respond
 Topography limitations
 Coal reserve degradation

Opportunities:

Threats:

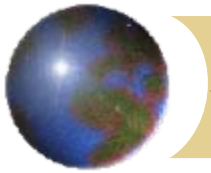
External
 Long term plans for generation/sourcing
 Define reserve capacity requirements
 Mechanism to ensure capacity investments
 Funding for reliable energy supply chain infrastructure
 Technology advancement for CCS

Regulatory constraints
 Uncertainty in the future demand for coal
 Uncertainty of the sourcing regions in the future



Communication & Tactical Execution Best Practices

<i>Supply Chain Participant</i>	<i>Communication & Tactical Execution Best Practices</i>
Receiver	Communicate lead time on incidents restricting delivery
Railroad	Supply/demand balance
Railroad	Maximize slots
Railroad	Efficient ratable network
Producer	Balance production and sales



Communication & Tactical Execution

SWOT

Helpful

Harmful

Strengths:

Weaknesses:

Railroad Web Based Communication Platform
Resources dedicated to efficient supply chain execution
Business relationships
Strong industry trade groups

Reluctance to share operational problems
Inappropriate reaction to operational information
Untrained personnel
Ineffective internal communications

Opportunities:

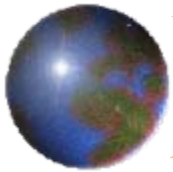
Threats:

RETAC structure, processes & output
Trade associations with common goals
Long term plans for generation/sourcing

Attracting qualified people
Ineffective communication with government entities
Regulatory constraints

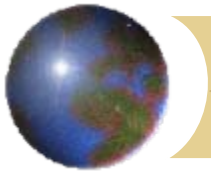
Internal

External



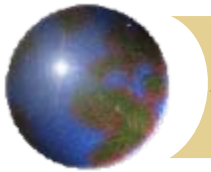
Operating Practices Best Practices

<i>Participant</i>	<i>Operating Practices Best Practices</i>
Receiver	Adequate stockpile targets
Receiver	Unload upon arrival
Receiver	Diversified supply
Receiver	Employ strong traffic team
Receiver	Preventive maintenance on coal handling equipment
Railroad	Maximize slots
Railroad	Efficient ratable network
Producer	Loading on arrival 24/7
Producer	Adequate pile or uncovered coal at mine



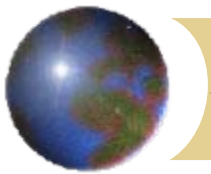
Operating Practices SWOT

	Helpful	Harmful
	Strengths:	Weaknesses:
Internal	Focus on Safety Technical competence	Rigid labor rules Internally focused Lack of universal scheduled maintenance Weak coordination within the supply chain Lack of understanding of counterparty impact
	Opportunities:	Threats:
Extern:	Improve operations planning & forecasting Improve consistency in loading Equipment standardization	Declining labor force Equipment availability Economic cycles More restrictive environmental permitting requirements



Commercial Practices Best Practices

<i>Supply Chain Participant</i>	<i>Commercial Practices Best Practices</i>
Receiver	Balanced purchasing
Receiver	Adequate stockpile targets
Receiver	Diversified supply
Receiver	Communicate lead time on incidents restricting delivery
Railroad	Supply/demand balance
Producer	Balance production and sales



Commercial Practices SWOT

Helpful

Harmful

Strengths:

Weaknesses:

Long Standing Relationships
Demand/Sourcing Consistency
Well developed supply chain infrastructure

Orders don't match supply chain capability
Not having sufficient buffer for supply volatility
Rigid contract terms
Over the Counter Trades (linkage to physical)
Increasing need for source flexibility

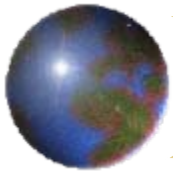
Opportunities:

Threats:

More transparent information

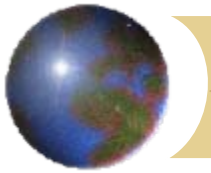
Commodity Price Volatility

Internal



Best Practices Alignment Matrix

	<i>Best Practice</i>	<i>Operating Practices</i>	<i>Physical Infrastructure</i>	<i>Communication & Tactical Execution</i>	<i>Commercial Practices</i>
Receiver	Adequate receiver stockpile targets				■
	Receiver unloads upon arrival	■	■		
	Diversified supply sources	■			■
	Receiver employs strong traffic team	■			
	Preventive maintenance on coal handling equipment	■			
	Adequate space for stockpile		■		
	Receiver communicates lead time on incidents restricting delivery		■	■	■
	Balanced purchasing month-to-month				■
Railroad	Railroad maximizes slots	■	■	■	
	Efficient ratable railroad network	■		■	
	Capacity supply/demand balance			■	■
Producer	Mines load on arrival 24/7	■	■		
	Adequate pile or uncovered coal at mine	■	■		
	Mine computerized batch weigh		■		
	Coal marketing balances production and sales			■	■



Best Practices Sub-committee

Next Steps and Challenges

- Consensus on best practices will be a challenge
 - Costs – benefits unaligned
 - sub-optimization of the supply chain can occur when individual parties attempt to optimize their own cost/risk structure without regard for the impact on the overall supply chain
- Communications best practices could be easiest to implement
- Sub-committee input on promoting best practices