

Sustainable Supply Chain Logistics



**SAFE
HANDLING
INC.**
®



ISO 9001:2000 & 14001:2004 Certified and a Responsible Care® Partner

Safe Handling Inc.

- Transport bulk materials
- Maine & Pennsylvania
- 100 employees
- Reduce emissions ~50k ton/yr CO₂
- #1 in Governor's Carbon Challenge
- ISO 9001
- ISO 14001











































“Sustainability” is in the News



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Non-Profits Are Applying Pressure

<http://www.forestethics.org/downloads/naughtynicelist2007.pdf>

CATALOG		ENDANGERED FORESTS	FSC CERTIFICATION	RECYCLED CONTENT	PAPER REDUCTION	caribou	fruitcake	coal
						nice	checking twice	naughty
NICE	Dell					Dell is a whiz, and not just at computers. Its model paper policy is one of the best in the industry.		
	Timberland					Timberland won't be getting any coal this year. It's earned a stocking full of gifts with its new paper policy.		
	Crate & Barrel					Crate & Barrel always remembers to say please and knows how to set a table. Plus, it has a good paper policy.		
	L.L. Bean					L.L. Bean has been trying to behave, but it needs some improvement in paper reduction.		
CHECKING TWICE	JC Penney					JC Penney is doing great on paper reduction, so why can't they commit to stay out of Endangered Forests?		
	Macy's/ Bloomingdales					Macy's/Bloomingdales is trying to get on Santa's nice list. Its new environmental initiatives look promising, but they're still in the early stages.		
	PC Mall					PC Mall has reduced paper use, but still doesn't have a paper policy, so it gets a fruitcake for the holidays.		
NAUGHTY	Lands' End					Lands' End catalogs come from endangered caribou habitat. If the reindeer lose their homes, how will they pull Santa's sleigh?		
	Eddie Bauer					Eddie Bauer hasn't made any commitments to improve its environmental impact. It's getting a stocking full of coal this year.		
	School Specialty					School Specialty has been misbehaving and didn't even respond to our survey. Definitely not this teacher's pet!		

Customers Are Driving Businesses To Focus On Sustainability



"Climate change is becoming THE issue. Increasingly, businesses will look to do business with businesses that are leaders in sustainability."

- David J. Refkin, Director of Sustainability for Time, the world's largest magazine publisher and largest direct buyer of coated paper in the US



"There is virtually no distinction between being a responsible citizen and a successful business" Lee Scott, CEO, Wal-Mart



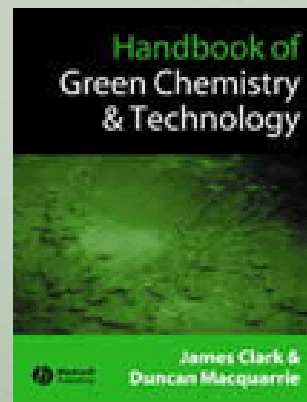
"A business strategy for high-quality food and beverage products can only be maintained by business practices founded on the principle of long-term sustainable development."

P. Brabeck-Letmathe, Chief Executive Officer, Nestlé



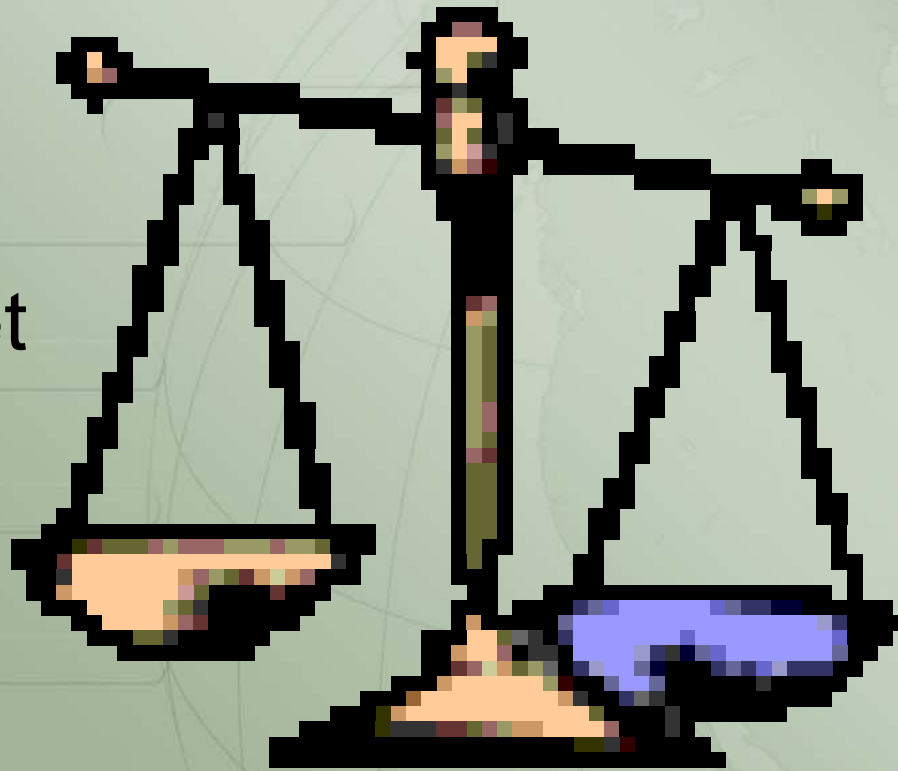
Customers Are Driving Businesses To Focus On Sustainability

- Green Paper
- Green Chemistry
- Sustainable Transportation



The Tyranny Of The "Or"

Planet



Profit



Jim Collins, *"Built To Last"*



So What is "Sustainability"?

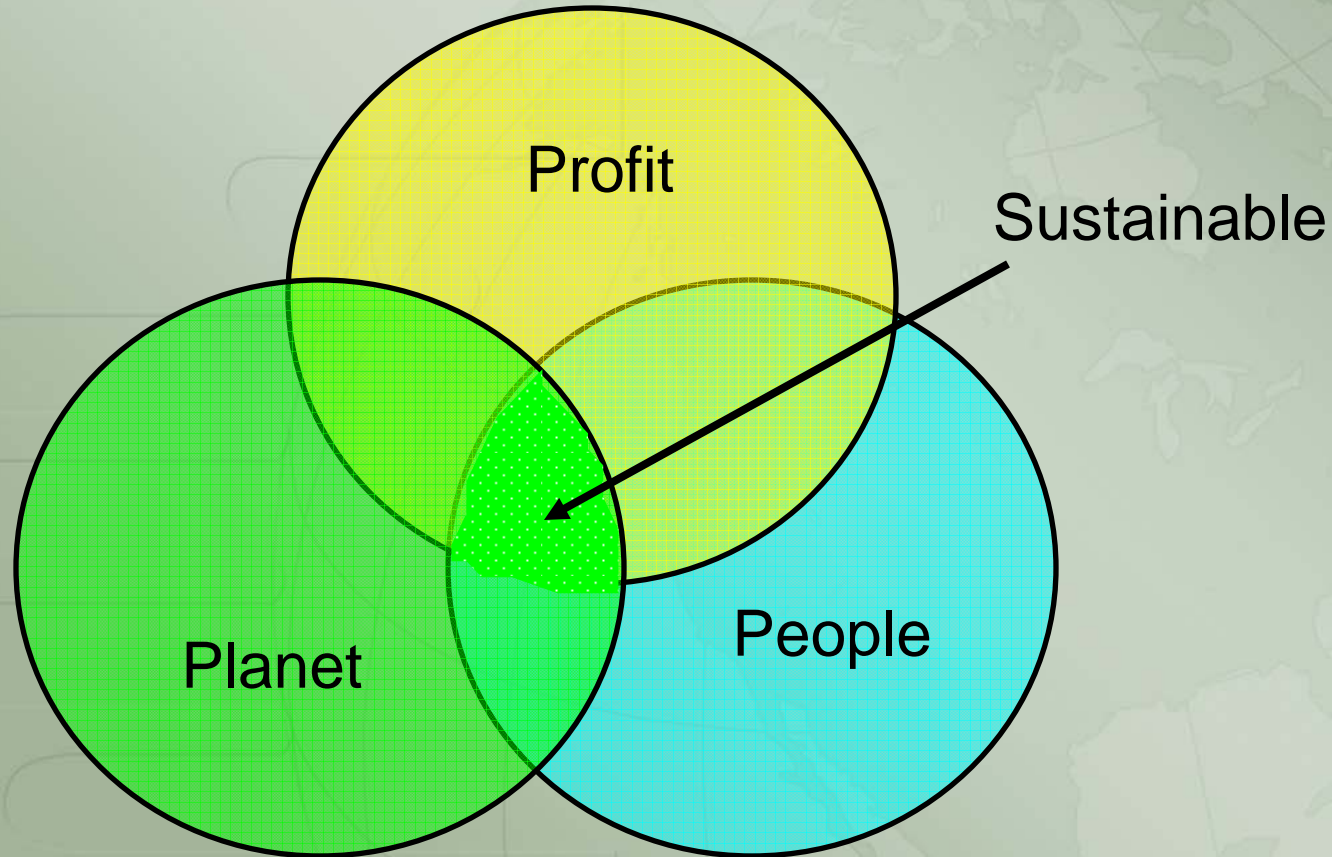
Original Definition:

Sustainable development "meets the needs of the present without compromising the ability of future generations to meet their own needs."

1987, United Nations World Commission on Environment and Development, Brundtland Report.



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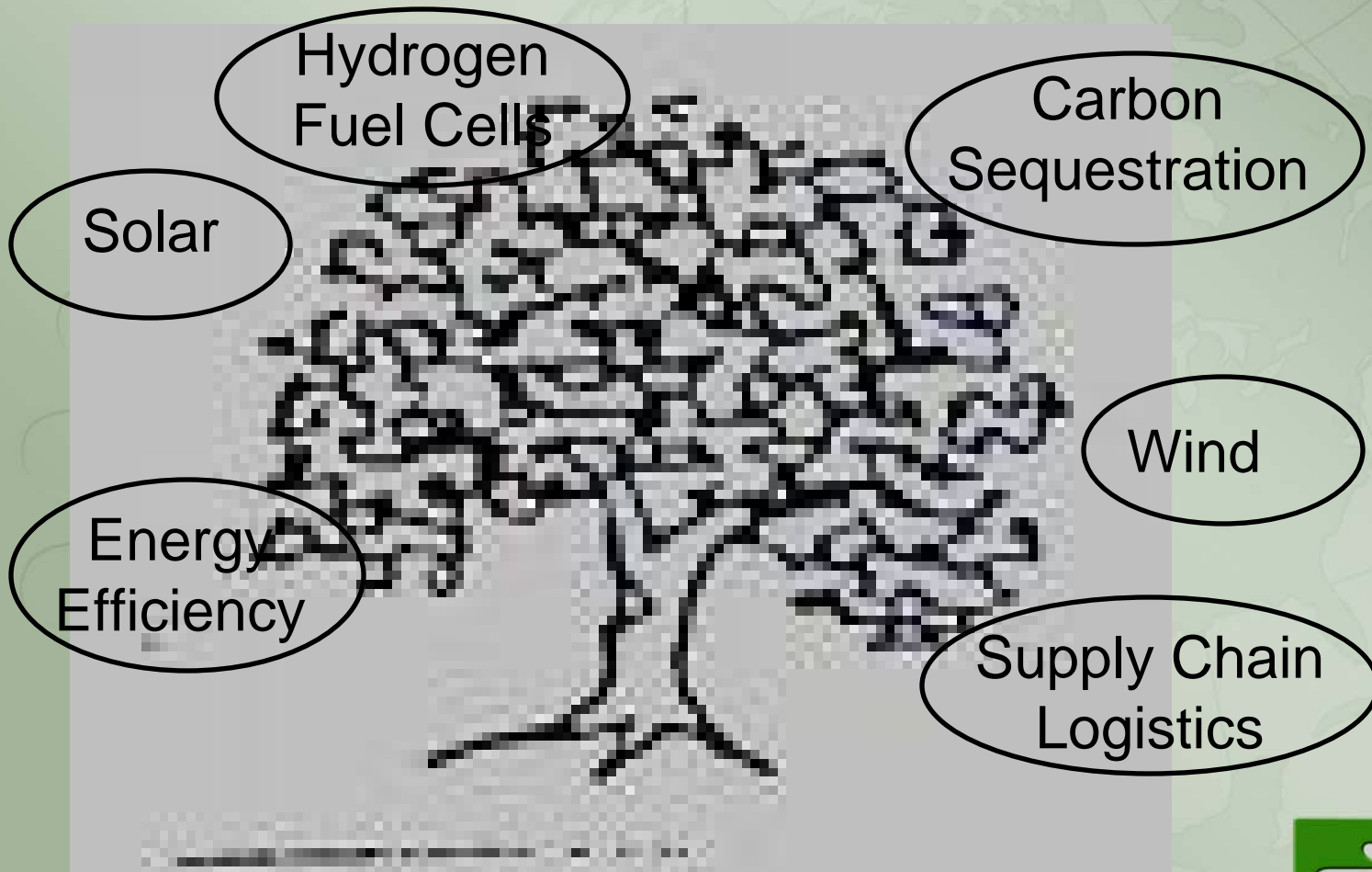


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Supply Chain Logistics is Low Hanging Fruit



Supply Chain Logistics – Sustainability Goals

1. Profit (economic)

- Reduce transportation cost (~10% of mat'l costs)

2. People (society)

- Reduce # trucks on road (safety & traffic)
- Reduce hazardous chemical exposure
- Reduce dependence on foreign oil

3. Planet (environment)

- 32% of US energy goes to transportation
- 67% of petroleum used for transportation
- Reduce emissions - “carbon footprint”



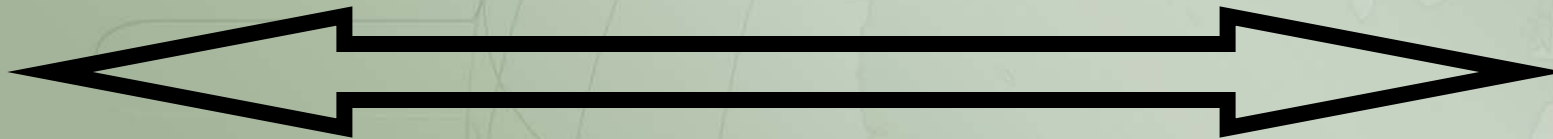
Transportation Options

1,043 tmg

423 tmg

113 - 163 tmg

12 tmg



Energy
Efficient

Convenient

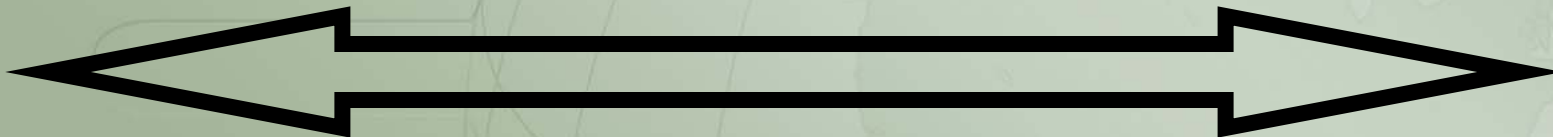
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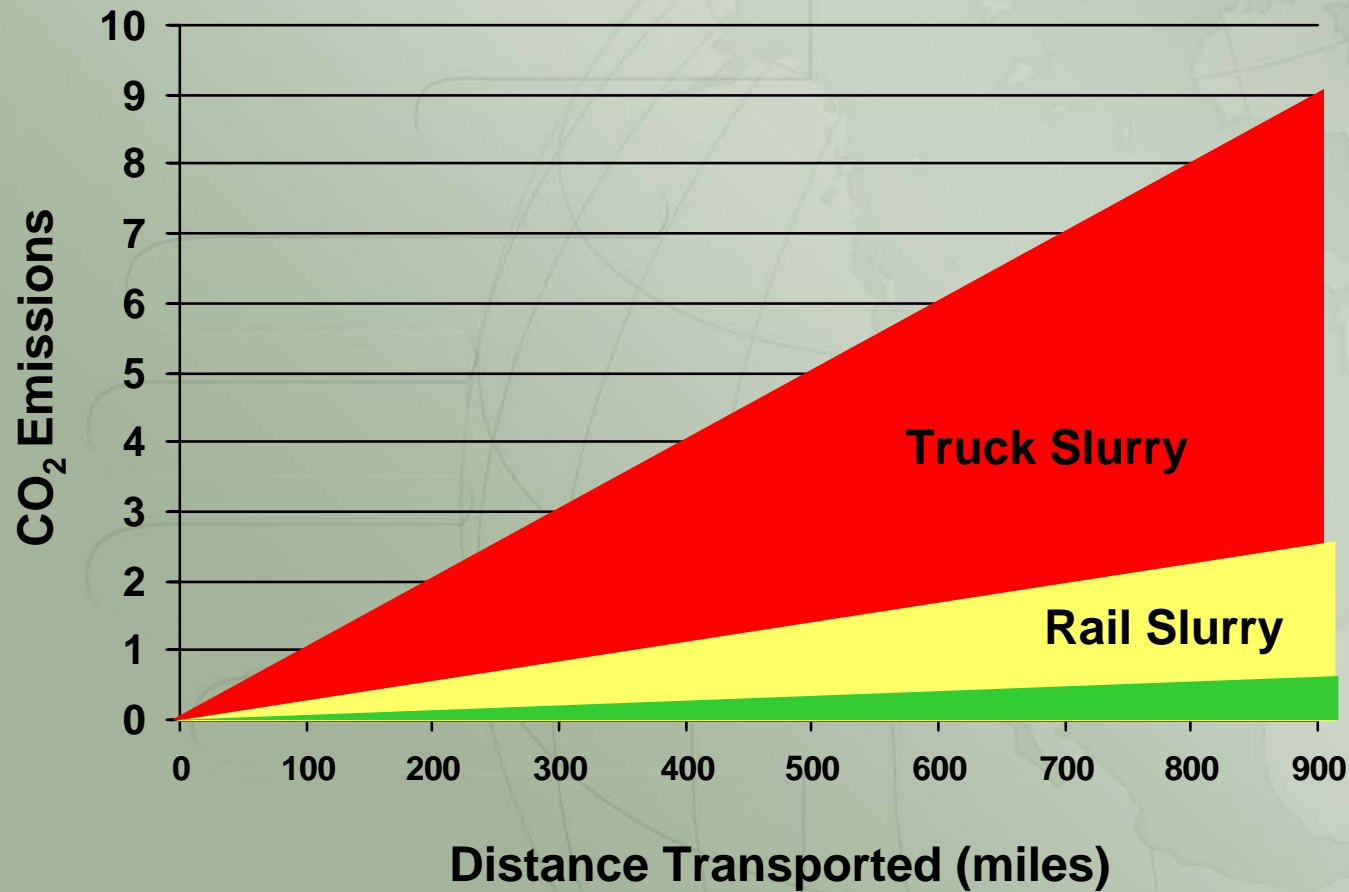
No Transportation At All

Four Ways Supply Chain Logistics Helps Companies Be More Sustainable

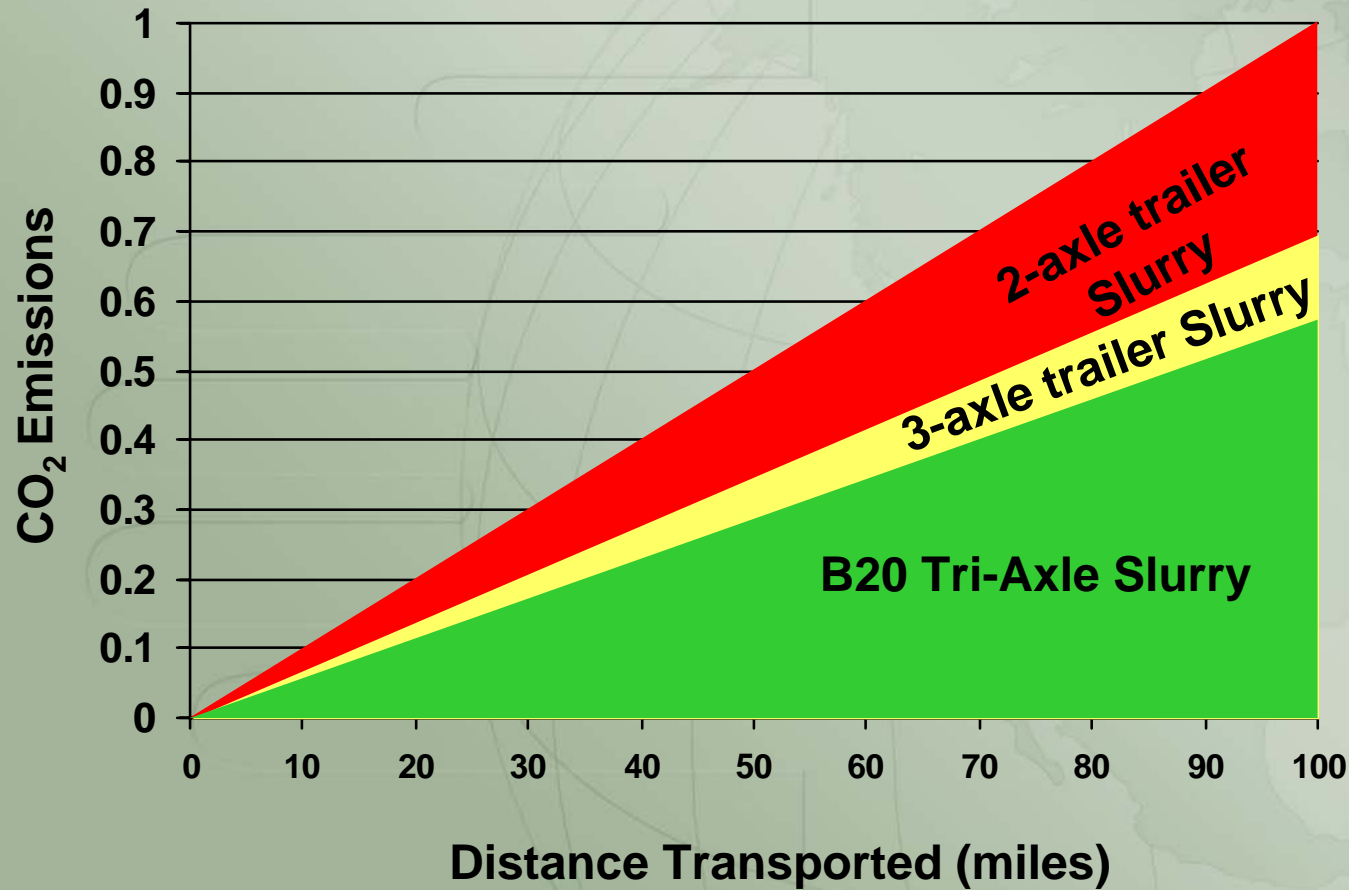
1. Rail – 73%
2. Regional Toll Processing 75%
3. Efficient Trucks 31%
4. Biodiesel 20%



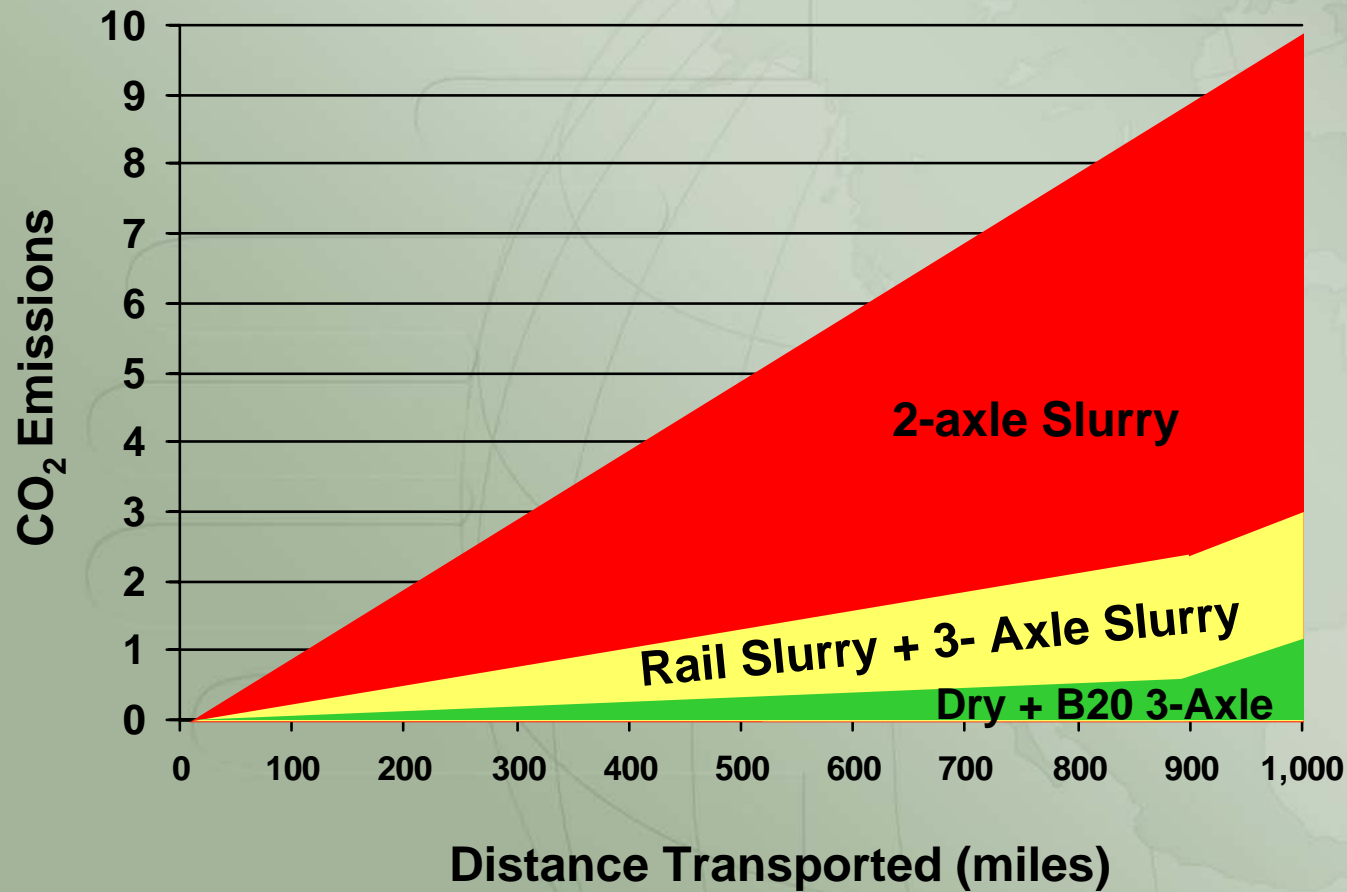
Long-Haul Options



Short-Haul Options



~90% Emission Reductions



Real Life Example

Safe Handling's Carbon Calculator

Transportation Carbon Calculator

estimates potential green house gas (CO2) reduction

by Safe Handling, Inc.

A. Traditional long-haul of slurry by tandem truck

Description	tons/yr	Origin	Destination	1-way Distance (mi)				tandem CO2 (tons/yr)		tri-ax CO2 (tons/yr)		Total CO2 (tons/yr)
				tandem truck	tri-ax truck	rail	chip	tandem CO2	tri-ax CO2	Rail CO2 (tons/yr)	Ship CO2 (tons/yr)	
1 Chemical "X" 25% solids slurry	4,000	South Carolina	Maine user	800	y			637	-	-	637	
2								-	-	-	-	
3								-	-	-	-	
4								-	-	-	-	
5								-	-	-	-	
6								-	-	-	-	
TOTAL								-	-	-	637	

B. Safe Handling long-haul of dry product by rail, then short-haul slurry by tri-axle truck

Description	tons/yr	Origin	Destination	1-way Distance (mi)				tandem CO2 (tons/yr)		tri-ax CO2 (tons/yr)		Total CO2 (tons/yr)
				tandem truck	tri-ax truck	rail	chip	tandem CO2	tri-ax CO2	Rail CO2 (tons/yr)	Ship CO2 (tons/yr)	
1 Chemical "X" dry	1,000	South Carolina	Auburn, ME	785			y	-	-	42	42	
2 Chemical "X" 25% solids slurry	4,000	Auburn, ME	Maine user	42		y		-	23	-	23	
3								-	-	-	-	
4								-	-	-	-	
5								-	-	-	-	
6								-	-	-	-	
TOTAL								-	-	42	66	

C.

Safe Handling Savings

% Carbon reduction	90%
Tons CO2/yr reduced	572
US Auto equivalents	95
Truck miles avoided	274,106



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Sustainable Supply Chain Logistics Benefits

1. Profit (economic)

- ~50% transportation cost reduction

2. People (society)

- >90% truck traffic reduction
- Reduces hazardous materials on roads
- Reduce dependence on foreign oil

3. Planet (environment)

- ~90% emission reductions



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