

## Review of Transportation Issues and Comparison of Infrastructure Costs

**Table 1. Total Freight Costs for Ethanol Transportation for 5.1 BGY Scenario (million 2000 dollars)**

PADD	Ethanol Shipped (BGY)	Ethanol Imports from PADD 2*			Shipments within PADDs				Total	
		Ship/Barge	Rail	Avg. (cents/gal.)	Truck	Rail	Barge	Avg. (cents/gal.)	Total Cost	Avg. (cents/gal.)
1	1.3	\$57.4	\$70.0	9.8	\$13.1		\$4.0	1.3	\$144.5	11.1
2	2.2				\$77.9	\$12.8	\$3.2	4.3	\$93.9	4.3
3	0.7	\$2.6	\$35.3	5.4	\$8.0		\$0.3	1.2	\$46.2	6.6
4	0.1		\$4.5	4.5	\$0.2			0.1	\$4.7	4.7
5	0.8	\$51.1	\$32.9	10.5	\$17.8			2.2	\$101.8	12.7
Total	5.1	\$111.1	\$142.7	5.0	\$117.1	\$12.8	\$7.5	2.7	\$391.1	7.7

\* Note: Totals may not add due to rounding of individual numbers. Where storage costs are a portion of transportation (e.g., product staging for inter-modal shipments), they are included in freight costs.

Source: Technology and Management Services, Inc., *Information Regarding Ethanol Delivery Infrastructure*, prepared for DAI (Gaithersburg, MD, January 23, 2002). Data taken from Downstream Alternatives, Inc., *Infrastructure Requirements for an Expanded Ethanol Industry* (South Bend, IN, January 15, 2002).

**Table 2. Total Estimated Capital Investment for Terminal Improvements and Retail Conversions for E10/E5.7 for 5.1 BGY Scenario (million 2000 dollars)**

PADD	New Ethanol Volume (BGY)*	Cost of New Tanks	Cost of Tank Conversion	Cost of Blending Systems	Modifying for Rail Receipt	Contingency	Retail Conversions	Total	Amortized Cost (cents per gallon)
1	1.102	\$8.89	\$0.65	\$24.30	\$7.10	\$1.26	\$6.50	\$48.66	0.69
2	1.072	\$5.40	\$0.31	\$33.00	\$5.33	\$2.02	\$7.44	\$53.49	0.78
3	0.626	\$5.74	\$0.34	\$22.20	\$3.55	\$1.24	\$5.28	\$38.34	0.96
4	0.042	\$0.75	\$0.02	\$2.40	\$1.07	\$0.12	\$0.31	\$4.66	1.73
5	0.145	\$2.33	\$0.06	\$4.20	\$0.36	\$0.24	\$1.25	\$8.42	0.91
TOTAL	2.987	\$23.06	\$1.37	\$86.10	\$17.34	\$4.88	\$20.78	\$153.58	0.80

\*Note: Totals may not add due to rounding of individual numbers.

Source: Technology and Management Services, Inc., *Information Regarding Ethanol Delivery Infrastructure*, prepared for DAI (Gaithersburg, MD, January 23, 2002). Data taken from Downstream Alternatives, Inc., *Infrastructure Requirements for an Expanded Ethanol Industry* (South Bend, IN, January 15, 2002).

**Table 3. Reduction in Reformulated Gasoline Costs Resulting from Reduction in Waterborne Transportation Costs for Moving Ethanol from the Midwest (2000 cents per gallon)**

Destination	Reduction
East Coast	0.14
Gulf Coast	0.35
West Coast	0.25

Sources: Energy Information Administration, Petroleum Market Model input files for *Annual Energy Outlook 2002*, derived from Information Resources, Inc., *United States Ethanol and Methanol Consumption and Pricing Analysis*, (Arlington, VA, Sept. 15, 1994); Downstream Alternatives, Inc., *Infrastructure Requirements for an Expanded Fuel Ethanol Industry* (South Bend, IN, January 15, 2002).