



U.S. Department of Energy  
Energy Efficiency  
and Renewable Energy



# *Clean Cities Alternative Fuel Price Report*

*October 2006*





## CLEAN CITIES ALTERNATIVE FUEL PRICE REPORT

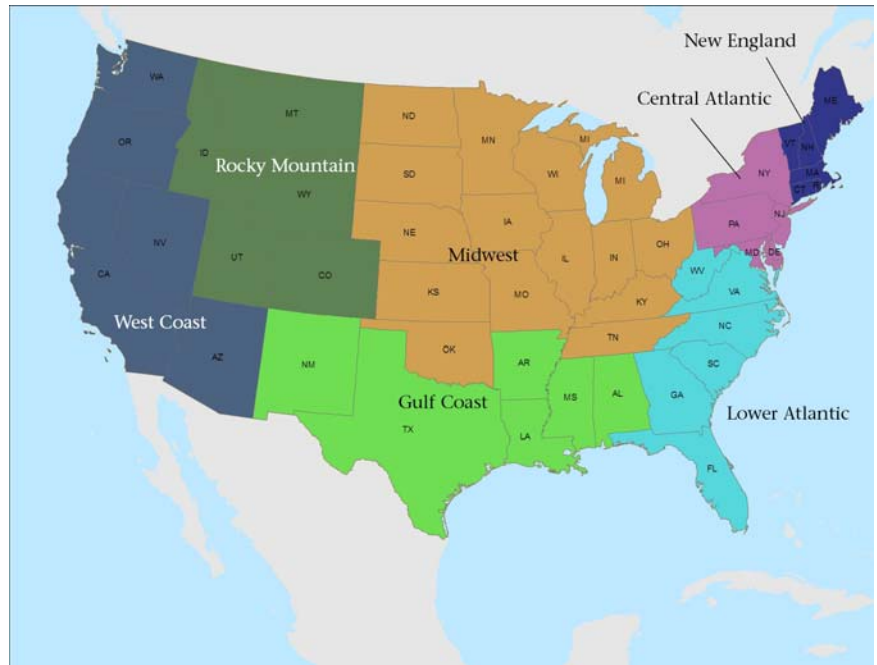
OCTOBER 2006

### WELCOME!

Welcome to the October 2006 issue of the Clean Cities Alternative Fuel Price Report, a quarterly report designed to keep you up to date on the prices of alternative fuels and conventional fuels in the U.S. This issue summarizes prices that were collected in the months of September and October 2006 from Clean Cities Coordinators, fuel providers, and other Clean Cities stakeholders.

### METHODOLOGY

In order to collect price information for both alternative fuels and conventional fuels from areas across the country, Clean Cities Coordinators, fuel providers, DOE Regional Offices, and other key stakeholders were contacted to request that they provide prices for fuels in their area on a voluntary basis. Prices were collected on all major alternative fuels currently in widespread use (natural gas, propane, biodiesel, and ethanol), as well as prices for conventional fuels at stations that also sell alternative fuels (or stations nearby). Prices were collected from public and private refueling stations throughout the country, and were collected between September 2006 and October 2006. Prices were then averaged in order to determine regional price trends by fuel and variability in fuel price within regions (and among regions). Prices in this report are grouped by U.S. areas as defined by the Petroleum Administration for Defense Districts (PADD): the districts are illustrated in the map to the right.



The prices collected for this report represent retail, at-the-pump sales prices for each fuel, including Federal and state motor fuel taxes. In some cases, prices were collected from government or utility refueling facilities and these taxes were not included in the reported price. In these instances, although these users are not required to pay these taxes, the taxes were added to the reported price to provide a more representative basis for comparison of fuel prices for the purpose of this report. In some cases, states may charge a flat annual fee for motor fuel taxes (especially for gaseous fuels like CNG): these fees are not considered in the prices reported in these pages.



## CLEAN CITIES ALTERNATIVE FUEL PRICE REPORT

OCTOBER 2006

### SUMMARY OF CURRENT REPORT INFORMATION

Overall nationwide average prices for conventional and alternative fuels are shown in Table 1. As this table illustrates, alternative fuel prices relative to conventional fuels vary, with some (propane and biodiesel) higher and some (E85 and CNG) lower. CNG is about 45 cents less than gasoline on an energy-equivalent basis, while E85 is about 11 cents less per gallon than gasoline. Biodiesel prices for low-level blends are higher than regular diesel by about 13 cents, and B20 blends are about 4 cents more per gallon than regular diesel. B99/B100 blends (essentially pure biodiesel) have a cost of about 69 cents per gallon more than regular diesel.

**Table 1. Overall Average Fuel Prices**

	Nationwide Average Price for Fuel This Report	Nationwide Average Price for Fuel Last Report	Change in Price This Report vs. Last Report	Units of Measurement
Gasoline (Regular)	\$2.22	\$2.84	(\$0.62)	per gallon
Diesel	\$2.62	\$2.98	(\$0.36)	per gallon
CNG	\$1.77	\$1.90	(\$0.13)	per GGE
Ethanol (E85)	\$2.11	\$2.43	(\$0.32)	per gallon
Propane	\$2.33	\$2.08	\$0.25	per gallon
Biodiesel (B20)	\$2.66	\$2.92	(\$0.26)	per gallon
Biodiesel (B2-B5)	\$2.75	\$2.97	(\$0.22)	per gallon
Biodiesel (B99-B100)	\$3.31	\$3.76	(\$0.45)	per gallon

Relative to the last report from June 2006, the average prices for all of the fuels included in this price report except propane have decreased in price, by as much as 30 cents. It should be noted that the price increases or decreases could be attributed both to an actual increase in price and to a slightly differing sample of prices (both location and quantity).

Prices in this report were collected and are reported in the units in which they are typically sold (dollars per gallon or dollars per gasoline-gallon equivalent). Because of differing energy contents per gallon for these fuels, the price paid per unit of energy content can differ somewhat from the price paid per gallon. Table 2 illustrates the fuel prices from Table 1 for the current reporting period normalized to a price per gasoline-gallon equivalent, diesel gallon equivalent, or per million Btu of energy. This calculation involves the use of lower heating values in Btu per gallon of fuel which can be found in the Transportation Energy Data Book<sup>1</sup>. Note that prices for the alternative fuels in terms of cost per gallon equivalent are higher than their cost per gallon because of their lower energy content per gallon. It has been seen, however, that consumer interest in alternative fuels increases as the price differential per gallon increases, even if that differential does not translate to savings on an energy-equivalent basis.

**Table 2. October 2006 Overall Average Fuel Prices on Energy-Equivalent Basis**

	Nationwide Average Price for Fuel in Gasoline Gallon Equivalents	Nationwide Average Price for Fuel in Diesel Gallon Equivalents	Nationwide Average Price for Fuel in Dollars per Million Btu
Gasoline	\$2.22	--	\$19.23
Diesel	--	\$2.62	\$20.36
CNG	\$1.77	\$1.97	\$15.32
Ethanol (E85)	\$2.98	\$3.32	\$25.79
Propane	\$3.22	\$3.59	\$27.90
Biodiesel (B20)	\$2.43	\$2.71	\$21.02
Biodiesel (B2-B5)	\$2.47	\$2.76	\$21.41
Biodiesel (B99-B100)	\$3.26	\$3.64	\$28.25

<sup>1</sup> A listing of the conversion factors used appears as an appendix at the end of this report.



## CLEAN CITIES ALTERNATIVE FUEL PRICE REPORT

OCTOBER 2006

### GASOLINE AND DIESEL PRICES

Average prices for gasoline and diesel as collected by Clean Cities coordinators and stakeholders

(supplemented where necessary with other reference sources for conventional fuels) are illustrated in Table 3.

These prices were collected from refueling stations selling both conventional fuels and alternative fuels, and from conventional fuel

refueling stations near alternative fuel stations. Almost 400 price points were collected for gasoline and over 300 for diesel, with average prices for gasoline ranging from a low of \$2.11 per gallon in the Gulf Coast region to a high of \$2.43 per gallon on the West Coast. Diesel prices ranged from \$2.51 in the Gulf Coast region to \$2.74 on the West Coast. Because prices for conventional fuels were collected from stations and regions providing alternative fuel price information, data collection was not uniform across the regions of the country. The information is, however, representative of refueling stations selling both alternative fuels and conventional fuels.

Table 4 illustrates average prices as provided by the DOE Energy Information Administration (EIA) on the petroleum information section of its website

([http://www.eia.doe.gov/oil\\_gas/petroleum/info\\_glance/petroleum.html](http://www.eia.doe.gov/oil_gas/petroleum/info_glance/petroleum.html)).

These prices are averages of prices from a selection of 800 retail fuel stations across the country. Note that the average nationwide price from EIA matches relatively closely with the averages from the station information collected from Clean Cities stakeholders. Given the relatively good match of averages calculated from EIA and from Clean Cities data, comparisons in this document between conventional fuel prices and alternative fuel prices

will be made using prices collected from Clean Cities representatives wherever possible, as these prices are most representative of stations selling both conventional and alternative fuels.

**Table 3. Average Gasoline and Diesel Prices by Region from Clean Cities Sources**

	Regular Gasoline Information Reported by Clean Cities (\$/gal)		Diesel Information Reported by Clean Cities (\$/gal)	
	Average Price / Standard Deviation of Price	Number of Data Points	Average Price / Standard Deviation of Price	Number of Data Points
New England	\$2.23 / 0.09	19	\$2.67 / 0.07	18
Central Atlantic	\$2.20 / 0.13	30	\$2.67 / 0.13	30
Lower Atlantic	\$2.13 / 0.10	63	\$2.58 / 0.08	46
Midwest	\$2.18 / 0.10	156	\$2.57 / 0.10	95
Gulf Coast	\$2.11 / 0.05	36	\$2.51 / 0.10	35
Rocky Mountain	\$2.38 / 0.19	31	\$2.62 / 0.11	26
West Coast	\$2.43 / 0.18	56	\$2.74 / 0.19	66
<b>NATIONAL AVERAGE</b>	<b>\$2.22 / 0.16</b>	<b>391</b>	<b>\$2.62 / 0.15</b>	<b>316</b>

**Table 4. EIA Gasoline and Diesel Price Averages**

	Gasoline Average Price from EIA, Week of 10/30/06	Diesel Average Price from EIA, Week of 10/30/06
New England	\$2.21	\$2.63
Central Atlantic	\$2.22	\$2.65
Lower Atlantic	\$2.15	\$2.47
Midwest	\$2.20	\$2.50
Gulf Coast	\$2.10	\$2.46
Rocky Mountain	\$2.31	\$2.58
West Coast	\$2.41	\$2.60
<b>NATIONAL AVERAGE</b>	<b>\$2.22</b>	<b>\$2.52</b>

## CLEAN CITIES ALTERNATIVE FUEL PRICE REPORT

OCTOBER 2006

### COMPRESSED NATURAL GAS (RELATIVE TO GASOLINE)

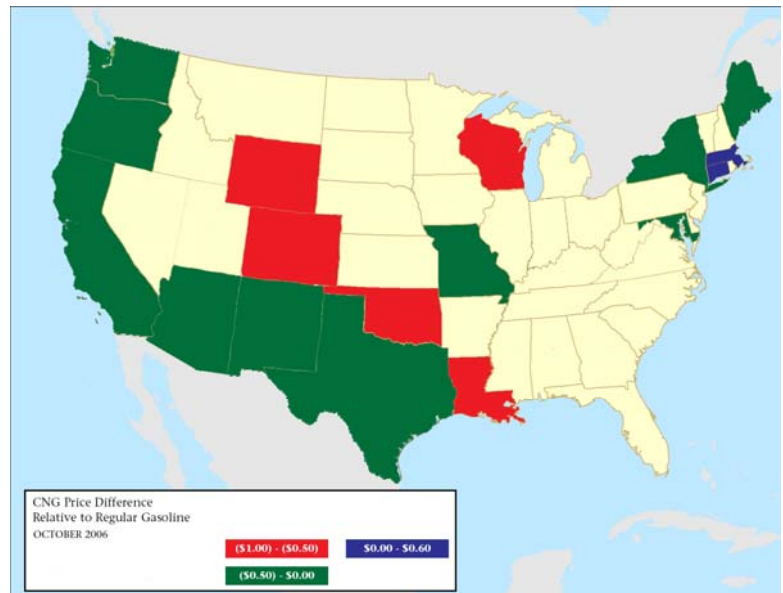
Average prices for compressed natural gas for vehicle use are illustrated in Table 5, grouped by region. Information on prices for regular gasoline as provided by Clean Cities representatives is also shown. These prices were collected from across the country from Clean Cities Coordinators, fuel providers, and other stakeholders on a voluntary basis. Just over 150 CNG prices were collected in this report<sup>2</sup>.

**Table 5. Compressed Natural Gas Average Prices by Region from Clean Cities Sources**

	Natural Gas (CNG) Information Reported by Clean Cities (\$/gge)		Regular Gasoline Information Reported by Clean Cities (\$/gal)	
	Average Price / Standard Deviation of Price	Number of Data Points	Average Price / Standard Deviation of Price	Number of Data Points
New England	\$2.49 / 0.54	3	\$2.23 / 0.09	19
Central Atlantic	\$2.03 / 0.24	22	\$2.20 / 0.13	30
Lower Atlantic	--	--	\$2.13 / 0.10	63
Midwest	\$1.24 / 0.12	43	\$2.18 / 0.10	156
Gulf Coast	\$1.89 / 0.17	16	\$2.11 / 0.05	36
Rocky Mountain	\$1.89 / 0.06	25	\$2.38 / 0.19	31
West Coast	\$1.99 / 0.18	45	\$2.43 / 0.18	56
<b>NATIONAL AVERAGE</b>	<b>\$1.77 / 0.38</b>	<b>154</b>	<b>\$2.22 / 0.16</b>	<b>391</b>

As Table 5 illustrates by region, CNG has a lower price than gasoline for all regions of the country for which prices were obtained except New England, with the largest difference (\$0.94 per gge) being in the Midwest (prices in the Midwest are based largely on refueling stations in Oklahoma which all offer CNG for the same price, as reported by a local Clean Cities Coordinator). On average, CNG costs about \$0.45 less than gasoline on a per gasoline gallon equivalent basis. Based on the calculated standard deviations of prices, the Rocky Mountain region had very low price variability.

The map to the right illustrates some cost differentials by state for natural gas relative to gasoline, based on differentials between natural gas prices and gasoline prices for each state (versus the regional averages illustrated in Table 5). In this map, negative numbers represent costs for natural gas lower than costs for gasoline. States not highlighted with a color did not have any natural gas data points in the current report. Note that Oklahoma, Colorado, and Louisiana appear to have very favorable CNG pricing relative to gasoline, but price structures are also favorable in areas such as Texas, California, and Arizona (where CNG refueling is prevalent) as well.



<sup>2</sup> Prices for CNG were provided by the individual stakeholders in gasoline-gallon equivalents from the “price at the pump.” It should be noted that the internal conversion factor between actual quantities of gas delivered (in cubic feet) and gge was not collected from each of the 146 stations. Regional differences in gas heat content relative to the internal pump conversion factor may change the price per gge; these differences were not determined for this report, however.

## CLEAN CITIES ALTERNATIVE FUEL PRICE REPORT

OCTOBER 2006

### COMPRESSED NATURAL GAS (RELATIVE TO DIESEL)

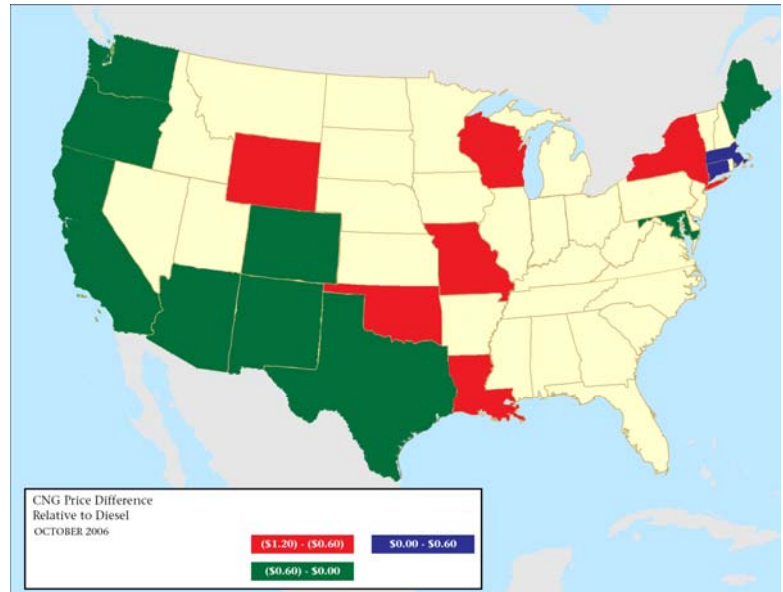
Average prices for compressed natural gas for vehicle use are illustrated in Table 6, grouped by region. Information on prices for conventional diesel fuel as provided by Clean Cities representatives is also shown. These prices were collected from across the country from Clean Cities Coordinators, fuel providers, and other stakeholders on a voluntary basis. Note that the CNG prices in Table 6 are the same group of prices as for Table 5, but converted to a cost per diesel gallon equivalent basis, in order to compare directly with diesel prices.

**Table 6. Compressed Natural Gas Average Prices by Region from Clean Cities Sources**

	Natural Gas (CNG) Information Reported by Clean Cities (\$/dge)		Diesel Information Reported by Clean Cities (\$/gal)	
	Average Price / Standard Deviation of Price	Number of Data Points	Average Price / Standard Deviation of Price	Number of Data Points
New England	\$2.77 / 0.60	3	\$2.67 / 0.07	18
Central Atlantic	\$2.26 / 0.27	22	\$2.67 / 0.13	30
Lower Atlantic	--	--	\$2.58 / 0.08	46
Midwest	\$1.38 / 0.13	43	\$2.57 / 0.10	95
Gulf Coast	\$2.11 / 0.19	16	\$2.51 / 0.10	35
Rocky Mountain	\$2.11 / 0.07	25	\$2.62 / 0.11	26
West Coast	\$2.22 / 0.20	45	\$2.74 / 0.19	66
<b>NATIONAL AVERAGE</b>	<b>\$1.97 / 0.42</b>	<b>154</b>	<b>\$2.62 / 0.15</b>	<b>316</b>

As Table 6 illustrates by region, CNG has a lower price than diesel for all regions of the country except New England, with the largest difference (\$1.19 per dge) being in the Midwest. On average, CNG costs about \$0.65 less than diesel on a per diesel gallon equivalent basis. Based on standard deviation calculations, CNG appears to have had more variability in price over the October 2006 time period relative to diesel fuel.

The map to the right illustrates some cost differentials by state for natural gas relative to diesel, based on differentials between natural gas prices and diesel prices for each state (versus the regional averages illustrated in Table 6). In this map, negative numbers represent costs for natural gas lower than costs for diesel. States not highlighted with a color did not have any natural gas data points in the current report. Oklahoma and Louisiana have favorable costs for natural gas relative to diesel, with large states like California and Texas (states with good density of refueling) also having good price differentials relative to diesel fuel.





## CLEAN CITIES ALTERNATIVE FUEL PRICE REPORT

OCTOBER 2006

### ETHANOL (E85)

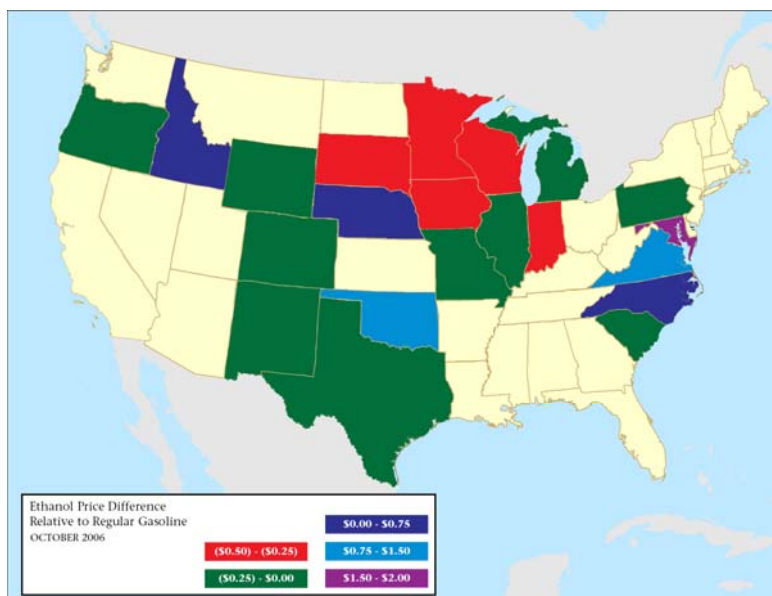
Average prices for ethanol in an 85% blend with 15% gasoline (E85) are illustrated in Table 7, grouped by region. Information on prices for regular gasoline as provided by Clean Cities representatives is also shown. These prices were collected from across the country from Clean Cities Coordinators, fuel providers, and other stakeholders on a voluntary basis. Over 100 prices for ethanol were collected in this data collection effort. Data collection was not uniform across regions of the country, but as the majority of operational ethanol stations are in the Midwest, data collection generally mirrored the density of refueling.

**Table 7. Ethanol (E85) Average Prices by Region from Clean Cities Sources**

	Ethanol (E85) Information Reported by Clean Cities (\$ per gal)		Regular Gasoline Information Reported by Clean Cities (\$ per gal)	
	Average Price / Standard Deviation of Price	Number of Data Points	Average Price / Standard Deviation of Price	Number of Data Points
New England	--	--	\$2.23 / 0.09	19
Central Atlantic	\$3.47 / 0.90	5	\$2.20 / 0.13	30
Lower Atlantic	\$2.09 / 0.25	27	\$2.13 / 0.10	63
Midwest	\$1.97 / 0.27	67	\$2.18 / 0.10	156
Gulf Coast	\$2.08 / 0.43	4	\$2.11 / 0.05	36
Rocky Mountain	\$2.23 / 0.29	11	\$2.38 / 0.19	31
West Coast	\$2.38 / 0.24	6	\$2.43 / 0.18	56
<b>NATIONAL AVERAGE</b>	<b>\$2.11 / 0.43</b>	<b>120</b>	<b>\$2.22 / 0.16</b>	<b>391</b>

Note that E85 has a lower average price per gallon than regular gasoline in all regions but the Central Atlantic (see Table 7). On average, E85 is about 11 cents lower in price than regular gasoline on a per-gallon basis, with the largest average differential (21 cents) being found in the Midwest. Based on the calculated standard deviations in this set of E85 price information, it can be seen that price variability for E85 was somewhat larger than the price variability for gasoline for the September 2006 period.

The map to the right illustrates some cost differentials between E85 and regular gasoline by state, based on differentials between E85 prices and gasoline prices for each state (versus the regional averages illustrated in Table 7). In this map, negative numbers represent costs for E85 lower than for gasoline, and positive numbers represent costs for E85 higher than gasoline. States not highlighted with a color did not have any E85 data points in the current report. Note that a number of states (including Minnesota, Illinois and Wisconsin) have E85 prices lower than gasoline on a per gallon basis. E85 costs are higher than gasoline for several areas of the country, including North Carolina, Virginia, and Maryland.





## CLEAN CITIES ALTERNATIVE FUEL PRICE REPORT

OCTOBER 2006

### PROPANE

Average prices for propane are illustrated in Table 8, grouped by region. Information on prices for regular gasoline as provided by Clean Cities representatives is also shown. These prices were collected from across the country from Clean Cities Coordinators, fuel providers, and other stakeholders on a voluntary basis.

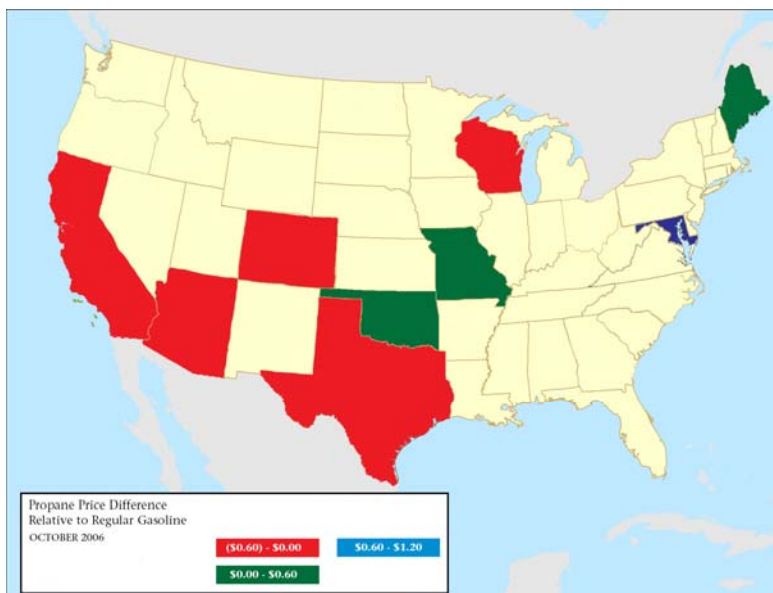
About 30 propane prices were collected in this reporting period.

**Table 8. Propane Average Prices by Region from Clean Cities Sources**

	Propane Information Reported by Clean Cities (\$ per gal)		Regular Gasoline Information Reported by Clean Cities (\$ per gal)	
	Average Price / Standard Deviation of Price	Number of Data Points	Average Price / Standard Deviation of Price	Number of Data Points
New England	\$2.53 / --	1	\$2.23 / 0.09	19
Central Atlantic	\$3.26 / 0.07	4	\$2.20 / 0.13	30
Lower Atlantic	--	0	\$2.13 / 0.10	63
Midwest	\$2.23 / 0.49	7	\$2.18 / 0.10	156
Gulf Coast	\$1.90 / 0.29	5	\$2.11 / 0.05	36
Rocky Mountain	\$1.92 / --	1	\$2.38 / 0.19	31
West Coast	\$2.28 / 0.58	14	\$2.43 / 0.18	56
<b>NATIONAL AVERAGE</b>	<b>\$2.41 / 0.63</b>	<b>32</b>	<b>\$2.22 / 0.16</b>	<b>391</b>

As Table 8 illustrates regionally, propane has a higher price than gasoline on a per-gallon basis in most of the U.S., based on these collected prices (about 11 cents per gallon on average nationwide). The Gulf Coast and West Coast regions have propane less than gasoline, at \$0.21 and \$0.15 per gallon respectively. Based on calculations of standard deviation in prices, it can be seen that propane prices for vehicle use seems to have varied more than gasoline prices during this sampling period.

The map to the right illustrates some cost differentials between propane and regular gasoline on a per-gallon basis, based on differentials between propane prices and gasoline prices for each state (versus the regional averages illustrated in Table 8). In this map, negative numbers represent costs for propane lower than costs for gasoline, and positive numbers represent propane prices higher than gasoline. States not highlighted with a color did not have any propane data points in the current report. Texas has favorable prices for propane, as do California, Arizona, Wisconsin, and Colorado.







## CLEAN CITIES ALTERNATIVE FUEL PRICE REPORT

OCTOBER 2006

### BIODIESEL BLENDS: B20

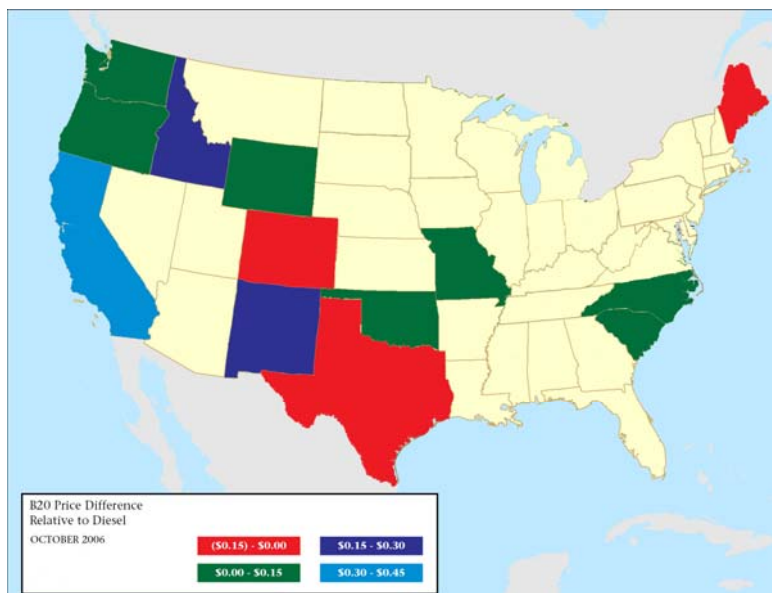
Average prices for biodiesel in a 20% blend with 80% diesel (B20) are illustrated in Table 9, grouped by region. Information on prices for regular diesel as provided by Clean Cities representatives is also shown. These prices were collected from across the country from Clean Cities Coordinators, fuel providers, and other stakeholders on a voluntary basis. About 30 prices were obtained for B20 across the country.

**Table 9. Biodiesel (B20) Average Prices by Region from Clean Cities Sources**

	Biodiesel (B20) Information Reported by Clean Cities (\$ per gal)		Diesel Information Reported by Clean Cities (\$ per gal)	
	Average Price / Standard Deviation of Price	Approximate Number of Stations	Average Price / Standard Deviation of Price	Approximate Number of Stations
New England	\$2.55 / --	2	\$2.67 / 0.07	18
Central Atlantic	--	--	\$2.67 / 0.13	30
Lower Atlantic	\$2.64 / 0.09	40	\$2.58 / 0.08	46
Midwest	\$2.41 / 0.04	3	\$2.57 / 0.10	95
Gulf Coast	\$2.60 / 0.27	3	\$2.51 / 0.10	35
Rocky Mountain	\$2.71 / 0.16	4	\$2.62 / 0.11	26
West Coast	\$2.78 / 0.25	13	\$2.74 / 0.19	66
<b>NATIONAL AVERAGE</b>	<b>\$2.66 / 0.16</b>	<b>65</b>	<b>\$2.62 / 0.15</b>	<b>316</b>

As Table 9 illustrates, biodiesel in a B20 blend has an average price per gallon that is generally close to conventional diesel fuel. Based on calculations of standard deviation on B20 prices, variability in B20 prices was relatively close to the variability in price of conventional diesel by region (as would probably be expected, given that 80% of the B20 blend is regular diesel fuel). On average in the U.S., biodiesel in a B20 blend costs about \$0.04 more per gallon than conventional diesel fuel.

The map to the right illustrates some cost differentials between B20 and diesel on a per-gallon basis, based on differentials between biodiesel prices and gasoline prices for each state (versus the regional averages illustrated in Table 9). In this map, negative numbers represent costs for B20 lower than costs for diesel, and positive numbers represent B20 prices higher than diesel. States not highlighted with a color did not have any B20 data points in the current report. Several states (including Texas and the Colorado) have B20 prices slightly less than diesel, but most states seem to have prices for B20 higher than for diesel.





## CLEAN CITIES ALTERNATIVE FUEL PRICE REPORT

OCTOBER 2006

### BIODIESEL BLENDS: LOW-LEVEL (B2-B5)

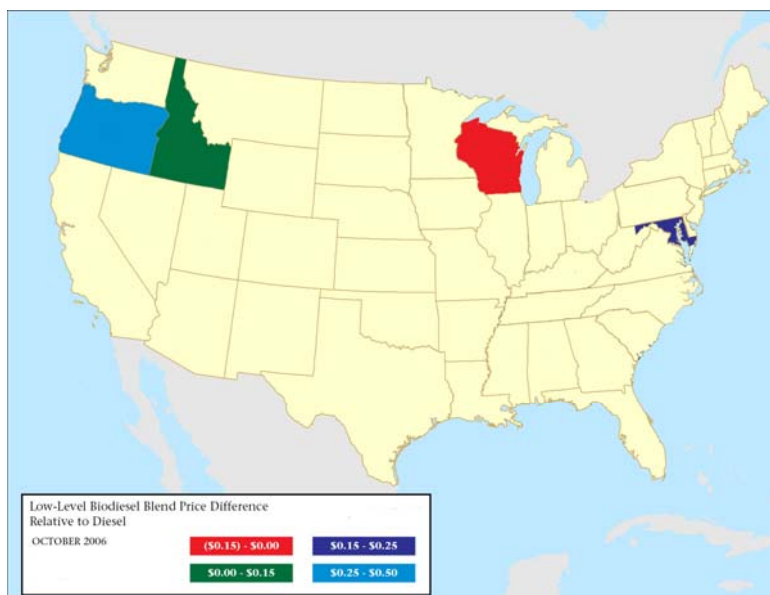
Average prices for biodiesel in lower-level blends (2-5% biodiesel in diesel fuel) are illustrated in Table 10, grouped by region. Information on prices for regular diesel as provided by Clean Cities representatives is also shown. These prices were collected from across the country from Clean Cities Coordinators, fuel providers, and other stakeholders on a voluntary basis. A total of five prices were obtained from areas in the Midwest offering low-level biodiesel blends.

**Table 10. Biodiesel (B2-B5) Average Prices by Region from Clean Cities Sources**

	Biodiesel (B2-B5) Information Reported by Clean Cities (\$ per gal)		Diesel Information Reported by Clean Cities (\$ per gal)	
	Average Price / Standard Deviation of Price	Number of Data Points	Average Price / Standard Deviation of Price	Number of Data Points
New England	--	--	\$2.67 / 0.07	18
Central Atlantic	\$2.80 / --	1	\$2.67 / 0.13	30
Lower Atlantic	--	--	\$2.58 / 0.08	46
Midwest	\$2.65 / 0.01	2	\$2.57 / 0.10	95
Gulf Coast	--	--	\$2.51 / 0.10	35
Rocky Mountain	\$2.75 / --	1	\$2.62 / 0.11	26
West Coast	\$2.90 / --	1	\$2.74 / 0.19	66
<b>NATIONAL AVERAGE</b>	<b>\$2.75 / 0.10</b>	<b>5</b>	<b>\$2.62 / 0.15</b>	<b>316</b>

As Table 10 illustrates regionally, average prices for low-level blends of biodiesel are close to, but a bit higher than as average diesel prices. This close tracking with diesel price would be expected, given the small percentage of biodiesel in these blends: the regular diesel price would have much more impact on the overall price of the blend than the biodiesel price. Differences in price between low-level biodiesel blends and regular diesel could be attributed to the small sample size.

The map to the right illustrates some cost differentials between low-level biodiesel blends and regular diesel on a per-gallon basis, based on differentials between biodiesel prices and gasoline prices for each state (versus the regional averages illustrated in Table 10). In this map, negative numbers represent costs for these blends that are lower than costs for diesel, and positive numbers represent prices for these blends that are higher than diesel. States not highlighted with a color did not have any low-level biodiesel blend data points in the current report. All of the states shown have prices for low-level biodiesel blends that are close to the price for diesel fuel in these states, based on this limited data sample.





## CLEAN CITIES ALTERNATIVE FUEL PRICE REPORT

OCTOBER 2006

### BIODIESEL BLENDS: B100/B99

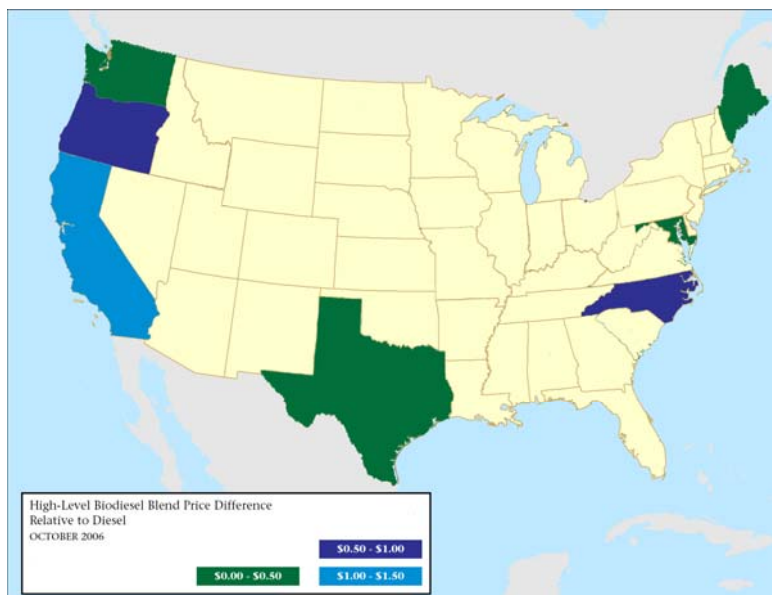
Average prices for high-level blends of biodiesel (99% or 100% biodiesel with diesel fuel) are illustrated in Table 11, grouped by region. Information on prices for regular diesel as provided by Clean Cities representatives is also shown. These prices were collected from across the country from Clean Cities Coordinators, fuel providers, and other stakeholders on a voluntary basis. About 19 price points were collected from stations offering B99/B100 for sale across the country.

**Table 11. Biodiesel (B99-B100) Average Prices by Region from Clean Cities Sources**

	Biodiesel (B99-B100) Information Reported by Clean Cities (\$ per gal)		Diesel Information Reported by Clean Cities (\$ per gal)	
	Average Price / Standard Deviation of Price	Number of Data Points	Average Price / Standard Deviation of Price	Number of Data Points
New England	\$2.94 / --	2	\$2.67 / 0.07	18
Central Atlantic	\$2.72 / 0.38	2	\$2.67 / 0.13	30
Lower Atlantic	\$3.50 / --	4	\$2.58 / 0.08	46
Midwest	--	--	\$2.57 / 0.10	95
Gulf Coast	\$2.78 / 0.45	2	\$2.51 / 0.10	35
Rocky Mountain	--	--	\$2.62 / 0.11	26
West Coast	\$3.55 / 0.68	9	\$2.74 / 0.19	66
<b>NATIONAL AVERAGE</b>	<b>\$3.31 / 0.59</b>	<b>19</b>	<b>\$2.62 / 0.15</b>	<b>316</b>

As Table 11 illustrates regionally, the cost of B99/B100 is higher than the cost of diesel fuel per gallon in the regions for which data were collected. On average across the nation, B99/B100 is about 69 cents per gallon higher than regular diesel. Based on standard deviation calculations on these price points, it appears that prices for B99/B100 varied more widely in the October 2006 time period than regular diesel.

The map to the right illustrates some cost differentials between high-level biodiesel blends and regular diesel on a per-gallon basis, based on differentials between biodiesel prices and gasoline prices for each state (versus the regional averages illustrated in Table 11). In this map, negative numbers represent costs for these blends that are lower than costs for diesel, and positive numbers represent prices for these blends that are higher than diesel. States not highlighted with a color did not have any high-level biodiesel blend data points in the current report. Prices for high-level blends were higher than for diesel fuel for all the states from which data points were collected.





## CLEAN CITIES ALTERNATIVE FUEL PRICE REPORT

OCTOBER 2006

### COMPARISON OF PRICES OF THIS REPORT VERSUS LAST REPORT

Table 12 below summarizes the average prices collected for this report by region, and compares them to prices collected in the Price Report from June 2006. As this table shows, virtually all fuels whose prices are included in the reporting experienced a price decrease relative to the last report. It should be noted that a portion of the price decrease could be attributed to differing sample sizes and composition between the two reports.

Table 12. Comparison of Prices, Last Price Report versus Current Price Report

		Price for October 2006 Period	Price for June 2006 Period	Price Differential October vs. June
<i>Gasoline (\$ per gallon)</i>	<i>National Average</i>	\$2.22	\$2.84	(\$0.62) / -22%
	New England	\$2.23	\$2.97	(\$0.74) / -25%
	Central Atlantic	\$2.20	\$2.90	(\$0.70) / -24%
	Lower Atlantic	\$2.13	\$2.74	(\$0.61) / -22%
	Midwest	\$2.18	\$2.78	(\$0.60) / -22%
	Gulf Coast	\$2.11	\$2.80	(\$0.69) / -25%
	Rocky Mountain	\$2.38	\$2.82	(\$0.44) / -16%
	West Coast	\$2.43	\$3.16	(\$0.73) / -23%
	<i>Diesel (\$ per gallon)</i>	<i>National Average</i>	\$2.62	\$2.98
New England		\$2.67	\$3.04	(\$0.37) / -12%
Central Atlantic		\$2.67	\$3.01	(\$0.34) / -11%
Lower Atlantic		\$2.58	\$2.93	(\$0.35) / -12%
Midwest		\$2.57	\$2.88	(\$0.31) / -11%
Gulf Coast		\$2.51	\$2.89	(\$0.38) / -13%
Rocky Mountain		\$2.62	\$3.03	(\$0.41) / -14%
West Coast		\$2.74	\$3.25	(\$0.51) / -16%
<i>Compressed Natural Gas (\$ per GGE)</i>		<i>National Average</i>	\$1.77	\$1.90
	New England	2.49	--	--
	Central Atlantic	\$2.03	\$2.56	(\$0.53) / -21%
	Lower Atlantic	--	--	--
	Midwest	\$1.24	\$1.21	\$0.03 / 2%
	Gulf Coast	\$1.89	\$2.28	(\$0.39) / -17%
	Rocky Mountain	\$1.89	\$2.16	(\$0.27) / -13%
	West Coast	\$1.99	\$2.30	(\$0.31) / -13%
	<i>Ethanol (E85) (\$ per gallon)</i>	<i>National Average</i>	\$2.11	\$2.43
New England		--	--	--
Central Atlantic		\$3.47	\$2.95	\$0.52 / 18%
Lower Atlantic		\$2.09	\$2.74	(\$0.65) / -24%
Midwest		\$1.97	\$2.34	(\$0.37) / -16%
Gulf Coast		\$2.08	\$2.78	(\$0.70) / -25%
Rocky Mountain		\$2.23	\$2.62	(\$0.39) / -15%
West Coast		\$2.38	\$2.92	(\$0.54) / -18%



## CLEAN CITIES ALTERNATIVE FUEL PRICE REPORT

OCTOBER 2006

Table 12. Comparison of Prices, Last Price Report versus Current Price Report

		Price for October 2006 Period	Price for June 2006 Period	Price Differential October vs. June
<i>Propane (\$ per gallon)</i>	<i>National Average</i>	<b>\$2.33</b>	\$2.08	<b>\$0.25 / 12%</b>
	New England	\$2.53	\$3.16	(\$0.63) / -20%
	Central Atlantic	\$3.26	--	--
	Lower Atlantic	--	\$2.29	--
	Midwest	\$2.23	\$2.09	\$0.14 / 7%
	Gulf Coast	\$1.90	\$1.83	\$0.07 / 4%
	Rocky Mountain	\$1.92	\$1.92	\$0 / 0%
	West Coast	\$2.28	\$2.10	\$0.18 / 9%
	<i>Biodiesel (B20) (\$ per gallon)</i>	<i>National Average</i>	<b>\$2.66</b>	\$2.92
New England		\$2.55	\$2.96	(\$0.41) / -14%
Central Atlantic		--	--	--
Lower Atlantic		\$2.64	\$2.82	(\$0.18) / -6%
Midwest		\$2.41	\$2.86	(\$0.45) / -16%
Gulf Coast		\$2.60	\$2.94	(\$0.34) / -12%
Rocky Mountain		\$2.71	\$2.91	(\$0.20) / -7%
West Coast		\$2.78	\$3.26	(\$0.48) / -15%
<i>Biodiesel (B2-B5) (\$ per gallon)</i>		<i>National Average</i>	<b>\$2.75</b>	\$2.97
	New England	--	--	--
	Central Atlantic	\$2.80	--	--
	Lower Atlantic	--	--	--
	Midwest	\$2.65	\$2.97	(\$0.32) / -11%
	Gulf Coast	--	--	--
	Rocky Mountain	\$2.75	--	--
	West Coast	\$2.90	--	--
	<i>Biodiesel (B99-B100) (\$ per gallon)</i>	<i>National Average</i>	<b>\$3.31</b>	\$3.76
New England		\$2.94	\$3.89	(\$0.95) / -24%
Central Atlantic		\$2.72	\$3.00	(\$0.28) / -9%
Lower Atlantic		\$3.50	\$3.98	(\$0.48) / -12%
Midwest		--	--	--
Gulf Coast		\$2.78	\$2.75	\$0.03 / 1%
Rocky Mountain		--	--	--
West Coast		\$3.55	\$4.02	(\$0.47) / -12%



## CLEAN CITIES ALTERNATIVE FUEL PRICE REPORT

OCTOBER 2006

### ILLUSTRATION OF CONVERSION FACTORS FOR FUELS

The standard lower heating values for fuels from the Transportation Energy Databook 24 are listed below.

	Lower Heating Value
Gasoline	115,400 BTU/gal
Diesel	128,700 BTU/gal
Compressed Natural Gas	960 BTU/cubic foot
Ethanol	75,670 BTU/gal
Propane	83,500 BTU/gal
Biodiesel	117,093 BTU/gal

Conversion factors to establish prices in dollars per gasoline equivalent gallon are illustrated below, and were developed using the lower heating values outlined above. In the case of CNG, prices are provided to us in GGE, so no conversion is necessary (the representative heating value of CNG is provided above as a reference). To convert a price from dollars per gallon to dollars per gasoline equivalent gallon, multiply the price per gallon by the conversion factor.

	Conversion factor to GGE
CNG	1.00
Ethanol (E85)	1.41
Propane	1.38
Biodiesel (B20)	0.91
Biodiesel (B2)	0.90
Biodiesel (B100)	0.99

Conversion factors to establish prices in dollars per diesel equivalent gallon are illustrated below, and were developed using the lower heating values outlined above. To convert a price from dollars per gallon to dollars per diesel equivalent gallon, multiply the price per gallon by the conversion factor.

	Conversion factor to DGE
Ethanol (E85)	1.58
Propane	1.54
CNG (in GGE)	1.12
Biodiesel (B20)	1.02
Biodiesel (B2)	1.00
Biodiesel (B100)	1.10



## CLEAN CITIES ALTERNATIVE FUEL PRICE REPORT

OCTOBER 2006

### WOULD YOU LIKE TO PARTICIPATE?

If you would like to provide prices for alternative fuels in your region and be part of the data collection effort for this report, please contact:

Michael D. Laughlin  
New West Technologies, LLC  
4351 Garden City Drive, Suite 600  
Landover, MD 20785  
(301) 429-1180 x26 (phone)  
(301) 429-1185 (FAX)  
[mclaughlin@nwttech.com](mailto:mclaughlin@nwttech.com)

### DISCLAIMER

This document highlights work sponsored by agencies of the U.S. Government. Neither the U.S. Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the U.S. Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the U.S. Government or any agency thereof.