

# Clean Cities Alternative Fuel Price Report

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*October 2012*



U. S. Department of Energy

## WELCOME!

Welcome to the October 2012 issue of the Clean Cities Alternative Fuel Price Report, a quarterly report designed to keep Clean Cities coalitions and other interested parties up to date on the prices of alternative fuels and conventional fuels in the United States. This issue summarizes prices that were collected between September 28, 2012 and October 12, 2012 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, 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 28, 2012 and October 12, 2012. Prices were then averaged in order to determine regional price trends by fuel and variability in fuel price within regions (and among regions).<sup>1</sup> Consistent with the fuel price reporting format used by the U.S. Energy Information Administration (EIA), 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 appropriate federal and state 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 state motor fuel taxes, especially for gaseous fuels like compressed natural gas (CNG) and liquid propane gas (LPG). These flat fees are not considered in the prices reported in these pages.

<sup>1</sup> Fuel price averages for this report are determined by simply averaging the individual data points received. A national and regional comparison of average fuel prices for private and for public stations can be found on Table 12, pages 13-14.

## SUMMARY OF CURRENT REPORT INFORMATION

Overall nationwide average prices for conventional and alternative fuels are shown in Table 1.<sup>2</sup> As this table illustrates, alternative fuel prices relative to conventional fuels vary, with some (biodiesel) higher and some (CNG, E85, and propane) lower. CNG is about \$1.70 less than gasoline on an energy-equivalent basis. On a per-gallon basis, E85 is about 35 cents less than gasoline and propane is about \$1.26 less than gasoline. B20 prices are higher than regular diesel by about 5 cents, while B99/B100 blends have a cost of about 26 cents per gallon more than regular diesel.<sup>3</sup>

**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)	\$3.82	\$3.52	\$0.30	per gallon
Diesel	\$4.13	\$3.75	\$0.38	per gallon
CNG	\$2.12	\$2.05	\$0.07	per GGE
Ethanol (E85)	\$3.47	\$3.24	\$0.23	per gallon
Propane	\$2.56	\$2.64	(\$0.08)	per gallon
Biodiesel (B20)	\$4.18	\$3.83	\$0.35	per gallon
Biodiesel (B99-B100)	\$4.39	\$4.23	\$0.16	per gallon

Relative to the last report from July 2012, the average prices for all liquid fuels included in this price report have increased by as much as 38 cents, and for the gaseous fuels, CNG increased 7 cents, and LPG decreased 8 cents. It should be noted that the price changes could be attributed both to an actual change 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 (GGE), per diesel gallon equivalent (DGE), or per million British thermal units (BTU) of energy. This calculation involves the use of nominal lower heating values in BTU per gallon of fuel which can be found in the Transportation Energy Data Book.<sup>4</sup> Note that prices for the alternative fuels in terms of cost per-gallon equivalent are generally higher than their cost per gallon because of their lower energy content per gallon.<sup>5</sup> It has been seen, however, that consumer interest in alternative fuels increases as the price differential per gallon increases (if the alternative fuel price is less than the conventional fuel price), even if that differential does not directly translate to savings on an energy-equivalent basis.

**Table 2. October 2012 Overall Average Fuel Prices on Energy-Equivalent Basis**

	Nationwide Average Price in Gasoline Gallon Equivalents	Nationwide Average Price in Diesel Gallon Equivalents	Nationwide Average Price in Dollars per Million Btu
Gasoline	\$3.82	\$4.26	\$33.10
Diesel	\$3.70	\$4.13	\$32.11
CNG	\$2.12	\$2.36	\$18.34
Ethanol (E85)	\$4.91	\$5.47	\$42.51
Propane	\$3.54	\$3.94	\$30.63
Biodiesel (B20)	\$3.82	\$4.26	\$33.08
Biodiesel (B99-B100)	\$4.32	\$4.82	\$37.47

<sup>2</sup> A very small sample (5 points) of hydrogen information was received: average price for hydrogen was \$3.49 per gasoline gallon equivalent in this report. Two of the five locations for which data was received, reported hydrogen at zero cost (free) for vehicle use. These two data points were not factored into the average price reported here.

<sup>3</sup> ASTM specifications now include blends of up to 5% biodiesel as regular diesel fuel, therefore the separate listing for B2/B5 was discontinued as of October 2009.

<sup>4</sup> A listing of the conversion factors used appears as an appendix at the end of this report. Although nationally most stations sell gasoline mixed with up to 10% ethanol, the percentage can vary by station, fuel supplier, and time of year; this report does not attempt to capture this data, and where applicable, conversion calculations between petroleum and alternative fuels are based upon gasoline without an ethanol blend.

<sup>5</sup> For ethanol flexible-fuel vehicles, the actual difference in fuel used per mile is somewhat less than would be calculated simply on the difference in energy content of the fuels, as some sources have noted some FFVs can achieve better energy efficiency (miles per unit of energy) on E85 than on gasoline. This effect is not currently included in these calculations as the magnitude of the effect varies by specific FFV model.

## GASOLINE AND DIESEL PRICES

Average prices for gasoline and diesel as collected by Clean Cities coordinators and other stakeholders (supplemented where necessary with other EIA 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. There were 499 price points collected for gasoline and 386 for diesel, with average prices for gasoline ranging from a low of \$3.53 per gallon in the Gulf Coast region to a high of \$4.26 per gallon on the West Coast. Diesel prices ranged from \$3.96 in the Lower Atlantic region

and \$4.47 per gallon 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 EIA on the petroleum information section of its website.<sup>6</sup> These prices are averages of prices from a selection of 900 gasoline and 350 diesel 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, generally differing by less than 5 cents per gallon. Comparisons in this document between conventional fuel prices and alternative fuel prices will be made using prices collected from Clean Cities sources 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	\$3.93 / 0.34	35	\$4.05 / 0.36	38
Central Atlantic	\$3.90 / 0.24	30	\$4.03 / 0.27	51
Lower Atlantic	\$3.66 / 0.15	84	\$3.96 / 0.24	55
Midwest	\$3.77 / 0.21	160	\$4.06 / 0.23	106
Gulf Coast	\$3.53 / 0.10	35	\$4.01 / 0.16	19
Rocky Mountain	\$3.74 / 0.11	80	\$4.20 / 0.16	44
West Coast	\$4.26 / 0.37	75	\$4.47 / 0.27	73
<b>NATIONAL AVERAGE</b>	<b>\$3.82 / 0.31</b>	<b>499</b>	<b>\$4.13 / 0.30</b>	<b>386</b>

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

	Gasoline Average Price from EIA, Week of 10/08/12	Diesel Average Price from EIA, Week 10/08/12
New England	\$3.96	\$4.22
Central Atlantic	\$3.91	\$4.19
Lower Atlantic	\$3.67	\$4.01
Midwest	\$3.77	\$4.04
Gulf Coast	\$3.54	\$4.00
Rocky Mountain	\$3.75	\$4.19
West Coast	\$4.41	\$4.32
<b>NATIONAL AVERAGE</b>	<b>\$3.85</b>	<b>\$4.09</b>

<sup>6</sup> <http://www.eia.doe.gov/petroleum/>

## COMPRESSED NATURAL GAS (RELATIVE TO GASOLINE)

Average prices for compressed natural gas (CNG) 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. Over 415 CNG prices were collected in this report.

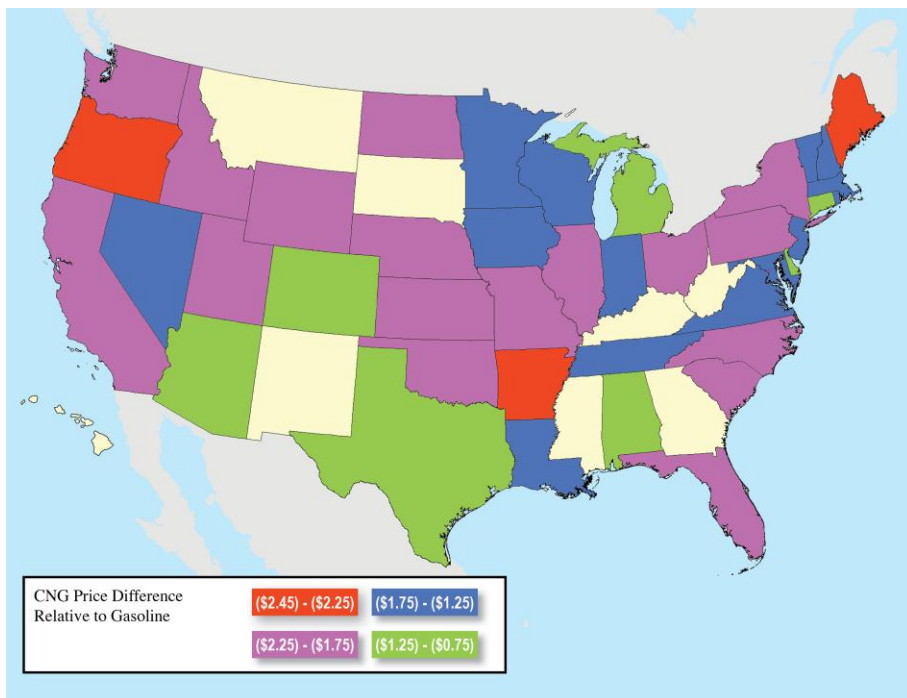
As Table 5 illustrates by region, CNG has a lower price than gasoline for all regions of the country for which prices were obtained, with the largest difference (\$2.03 per GGE) being in the Rocky Mountain region. On average, CNG costs about \$1.70 less than gasoline on a per gasoline gallon equivalent basis. Variability of CNG prices was higher (based on a standard deviation analysis) than variability of gasoline prices for this time period.

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. As the map illustrates, CNG prices (per GGE) were favorable relative to gasoline in most states across the country, with the most favorable pricing found in the West Coast region, as well as in other states located in the Gulf Coast and New England regions.

*Tech Note: 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 the physical quantities of gas delivered and gasoline gallon equivalent was not collected from each of the refueling stations. Regional differences in gas heat content relative to the internal pump conversion factor may change the price per gasoline gallon equivalent: these differences were not determined for this report, however.*

**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	\$2.47 / 0.68	25	\$3.93 / 0.34	35
Central Atlantic	\$2.15 / 0.56	83	\$3.90 / 0.24	30
Lower Atlantic	\$1.86 / 0.64	18	\$3.66 / 0.15	84
Midwest	\$1.95 / 0.47	59	\$3.77 / 0.21	160
Gulf Coast	\$2.14 / 0.63	12	\$3.53 / 0.10	35
Rocky Mountain	\$1.71 / 0.40	87	\$3.74 / 0.11	80
West Coast	\$2.41 / 0.53	133	\$4.26 / 0.37	75
<b>NATIONAL AVERAGE</b>	<b>\$2.12 / 0.59</b>	<b>417</b>	<b>\$3.82 / 0.31</b>	<b>499</b>



## COMPRESSED NATURAL GAS (RELATIVE TO DIESEL)<sup>7</sup>

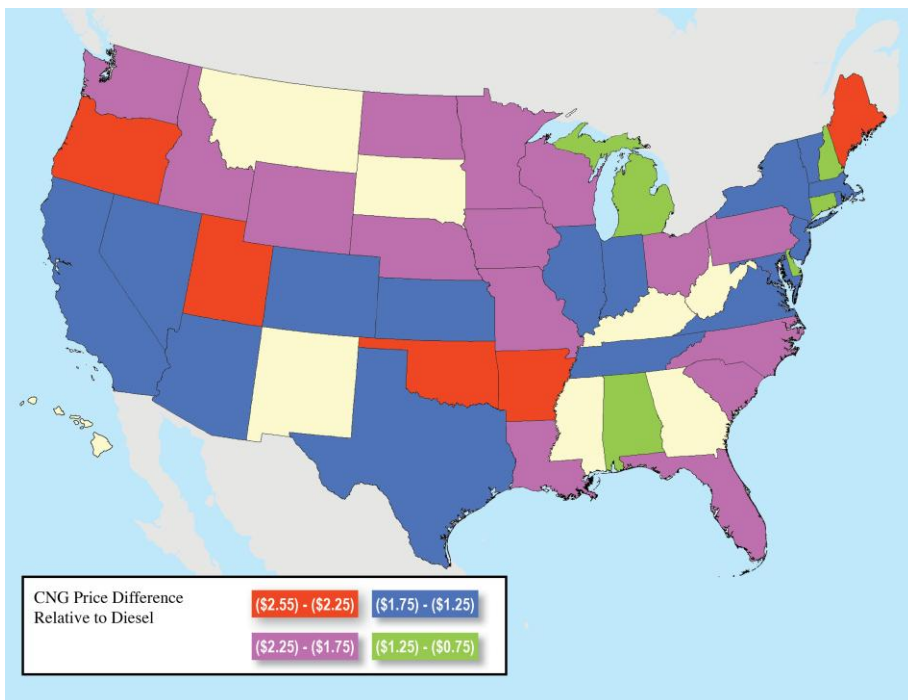
Average prices for compressed natural gas for vehicle use are illustrated in Table 6, grouped by region. Information on prices for conventional diesel fuel as provided by representatives from Clean Cities and supplemental sources is also shown. These prices were collected from across the country from Clean Cities Coordinators, fuel providers, and other stakeholders on a voluntary basis. Note that the CNG prices in Table 6 are based upon 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	\$2.76 / 0.76	25	\$4.05 / 0.36	38
Central Atlantic	\$2.39 / 0.62	83	\$4.03 / 0.27	51
Lower Atlantic	\$2.07 / 0.71	18	\$3.96 / 0.24	55
Midwest	\$2.18 / 0.52	59	\$4.06 / 0.23	106
Gulf Coast	\$2.39 / 0.70	12	\$4.01 / 0.16	19
Rocky Mountain	\$1.91 / 0.45	87	\$4.20 / 0.16	44
West Coast	\$2.68 / 0.59	133	\$4.47 / 0.27	73
<b>NATIONAL AVERAGE</b>	<b>\$2.36 / 0.66</b>	<b>417</b>	<b>\$4.13 / 0.30</b>	<b>386</b>

As Table 6 illustrates by region, CNG has a lower price than diesel for all regions of the country, with the largest difference (\$2.29 per DGE) being in the Rocky Mountain region. On average, CNG costs about \$1.77 less than diesel on a per diesel gallon equivalent basis. Based on standard deviation calculations, CNG appears to have had more variability in price during this 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. As with the comparison to gasoline, natural gas prices relative to diesel were favorable for most states across the country, with the most favorable pricing found in the Midwest region as well as in states located in the West Coast, Rocky Mountain, Gulf Coast, and New England regions.



<sup>7</sup> A total of 13 LNG price points were collected with an average fuel price of \$2.00 per gallon, or \$3.45 per DGE. Because of the small number of price points, this data is not reflected in the table.



## ETHANOL (E85)

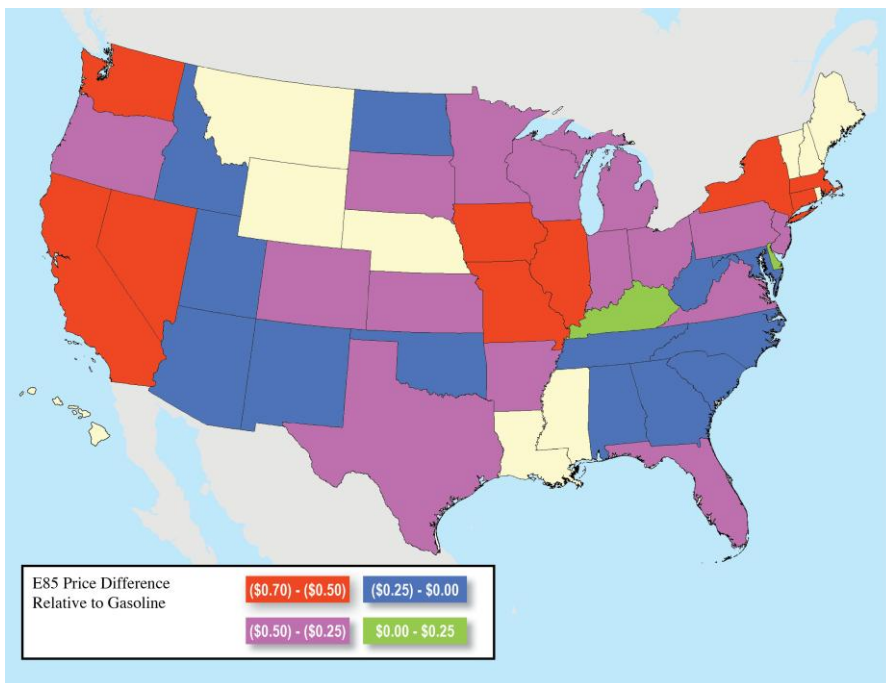
Average prices for ethanol in an 85% blend with 15% gasoline (E85) are illustrated in Table 7, grouped by region. Information on prices for regular gasoline as provided by Clean Cities representatives is also shown. These prices were collected from across the country from Clean Cities Coordinators, fuel providers, and other stakeholders on a voluntary basis. A total of 468 prices for ethanol were collected in this data collection effort.

Note that E85 has a lower average price per gallon than regular gasoline for all of the regions (see Table 7). On average, E85 is about 35 cents lower in price than regular gasoline on a per-gallon basis, with the largest average differential (57 cents) being found in the West Coast region. Based on the calculated standard deviations in this set of E85 price information, it can be seen that price variability for E85 was lower on a national basis, while on a regional basis variability was higher in some areas and lower in others.

**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	\$3.43 / 0.05	2	\$3.93 / 0.34	35
Central Atlantic	\$3.50 / 0.23	79	\$3.90 / 0.24	30
Lower Atlantic	\$3.45 / 0.22	60	\$3.66 / 0.15	84
Midwest	\$3.46 / 0.25	174	\$3.77 / 0.21	160
Gulf Coast	\$3.32 / 0.11	37	\$3.53 / 0.10	35
Rocky Mountain	\$3.37 / 0.16	56	\$3.74 / 0.11	80
West Coast	\$3.69 / 0.24	60	\$4.26 / 0.37	75
<b>NATIONAL AVERAGE</b>	<b>\$3.47 / 0.24</b>	<b>468</b>	<b>\$3.82 / 0.31</b>	<b>499</b>

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, on a per-gallon basis. States not highlighted with a color did not have any E85 data points in the current report. In the time period for this report, the state with the most favorable E85 pricing was located in the Central Atlantic region, with other states in the Midwest and West Coast regions experiencing similar favorable pricing.



*Tech Note: Ethanol (E85) contains about 30% less energy (BTUs) per volume than gasoline. FFVs operating on E85 do not experience a loss in operational performance, but may experience a 25-30% decrease in miles driven per gallon compared to operation on gasoline. The appendix at the end of this report provides conversion factors for calculating E85 prices on a GGE and DGE basis. For a side-by-side comparison of available flexible fuel and other alternatively fueled vehicles, visit <http://www.fueleconomy.gov>.*

## PROPANE

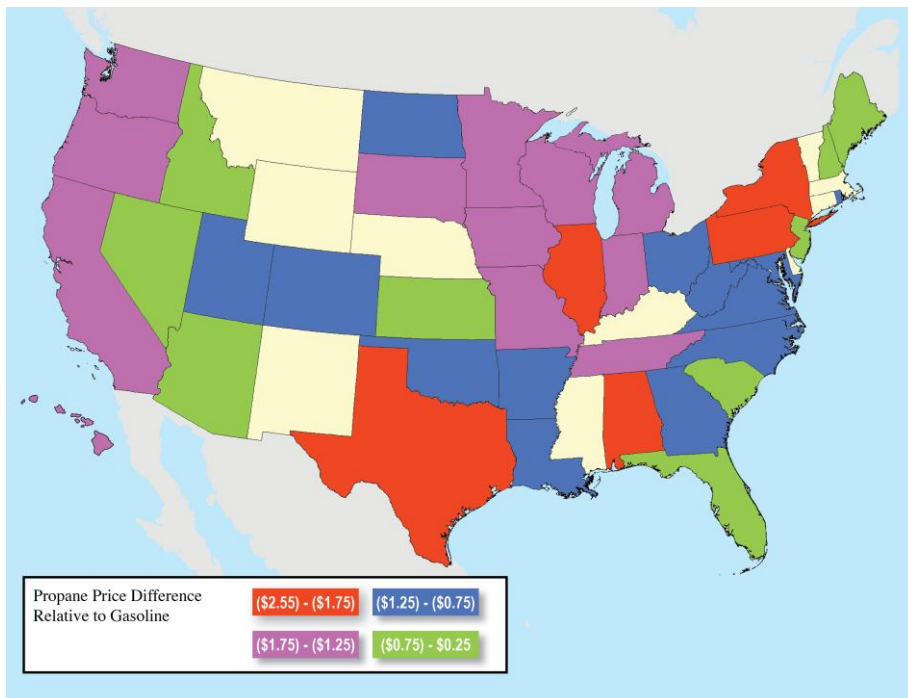
Average prices for propane are illustrated in Table 8, grouped by region. Information on prices for regular gasoline as provided by representatives from Clean Cities is also shown. These prices were collected from across the country from Clean Cities Coordinators, fuel providers, and other stakeholders on a voluntary basis. Some stations charge a different price for propane used in vehicles versus other uses. Where provided, the vehicle price has been included in this report. In total, 342 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	\$3.07 / 0.51	12	\$3.93 / 0.34	35
Central Atlantic	\$2.51 / 0.85	39	\$3.90 / 0.24	30
Lower Atlantic	\$2.87 / 0.49	36	\$3.66 / 0.15	84
Midwest	\$2.47 / 0.72	59	\$3.77 / 0.21	160
Gulf Coast	\$1.90 / 0.54	59	\$3.53 / 0.10	35
Rocky Mountain	\$2.66 / 0.63	53	\$3.74 / 0.11	80
West Coast	\$2.83 / 0.72	84	\$4.26 / 0.37	75
<b>NATIONAL AVERAGE</b>	<b>\$2.56 / 0.74</b>	<b>342</b>	<b>\$3.82 / 0.31</b>	<b>499</b>

As Table 8 illustrates regionally, propane prices are lower than gasoline in all regions for this report on a per-gallon basis. Overall, propane was about \$1.26 cents per gallon less than gasoline with the largest average price differential of \$1.63 found in the Gulf Coast region. Based on calculations of standard deviation in prices for this report, it can be seen that propane prices for vehicle use seems to have varied significantly more than gasoline prices during this sampling period. Prices for propane in this report are from both private fleet refueling stations and public refueling sites that can provide propane for vehicles and for other uses. The prices at private stations serving fleets are generally lower than public stations. (See Table 12, pages 13-14, for a comparison of private and public pricing data for all of the fuels in this report.)

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. The majority of states with pricing information had favorable propane prices (per gallon) relative to gasoline. The most favorable prices were found in the Central Atlantic region, as well as in the Lower Atlantic, Midwest, and Gulf Coast regions.



*Tech Note: Propane contains about 25% less energy (BTUs) per volume than gasoline and about 35% less energy (BTUs) per volume than diesel. The appendix at the end of this report provides conversion factors for calculating propane prices on a GGE and DGE basis.*



## 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. Just over 165 prices were obtained for B20 across the country.

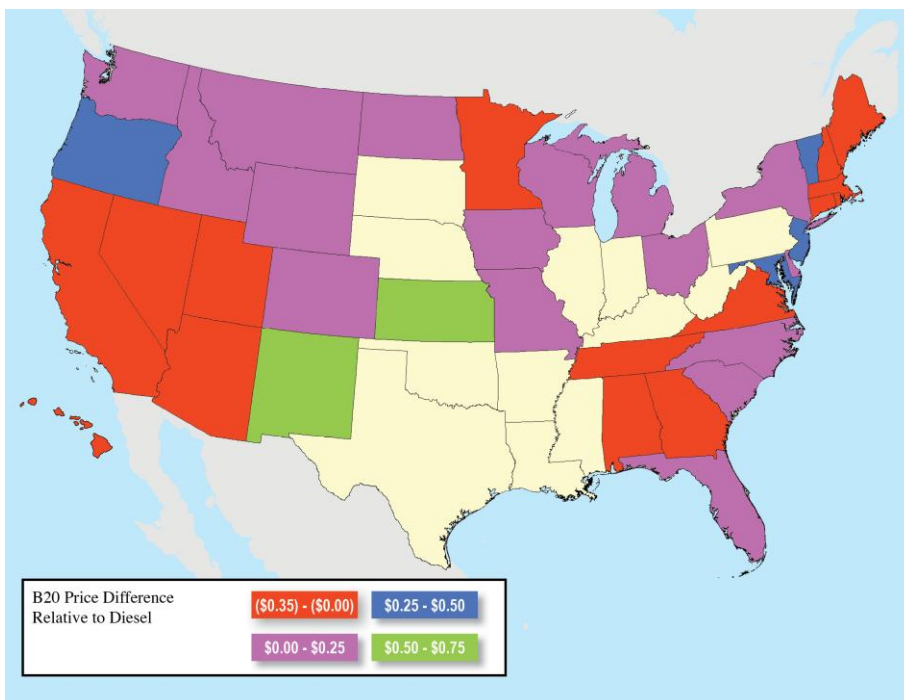
As Table 9 illustrates, biodiesel in a B20 blend has an average price per gallon that is somewhat higher than conventional diesel fuel in most of the regions for this report (ranging from 25 cents more to 21 cents less per gallon). Based on calculations of standard deviation during this collection period, regional price variability for B20 was larger in some areas, and lower in other areas, than that for conventional diesel, but similar on a national basis. On average in the U.S., biodiesel in a B20 blend costs about 5 cents more per gallon than conventional diesel fuel based on current information.

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 diesel 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. B20 had favorable pricing (per gallon) in a number of states located around the country with the most favorable price differentials found in the New England region.

*Tech Note: B20 contains only about 2% less energy (BTUs) per volume than diesel. The appendix at the end of this report provides conversion factors for calculating B20 prices on a GGE and DGE basis.*

**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	Number of Data Points	Average Price/ Standard Deviation of Price	Number of Data Points
New England	\$3.84 / 0.51	11	\$4.05 / 0.36	38
Central Atlantic	\$4.24 / 0.26	26	\$4.03 / 0.27	51
Lower Atlantic	\$4.04 / 0.24	28	\$3.96 / 0.24	55
Midwest	\$4.05 / 0.26	39	\$4.06 / 0.23	106
Gulf Coast	\$4.26 / 0.47	7	\$4.01 / 0.16	19
Rocky Mountain	\$4.27 / 0.17	18	\$4.20 / 0.16	44
West Coast	\$4.41 / 0.28	37	\$4.47 / 0.27	73
<b>NATIONAL AVERAGE</b>	<b>\$4.18 / 0.33</b>	<b>166</b>	<b>\$4.13 / 0.30</b>	<b>386</b>



## BIODIESEL BLENDS: B99/B100

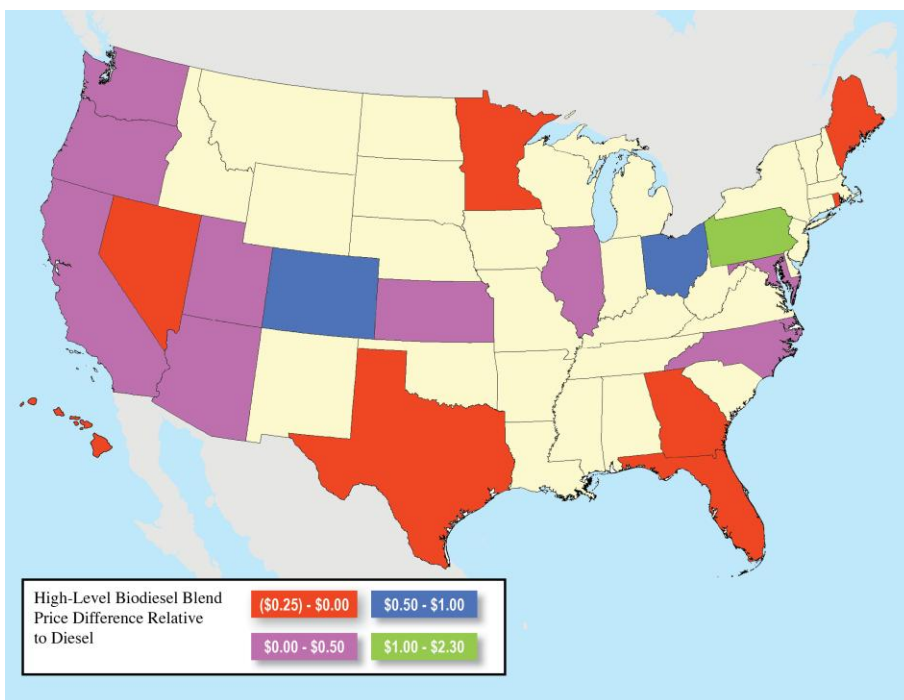
Average prices for high-level blends of biodiesel (99% or 100% biodiesel with diesel fuel) are illustrated in Table 10, grouped by region. Information on prices for regular diesel as provided by Clean Cities representatives is also shown. These prices were collected from across the country from Clean Cities Coordinators, fuel providers, and other stakeholders on a voluntary basis. A total of 54 price points were collected from stations offering B99/B100 for sale across the country.

**Table 10. 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	\$3.94 / 0.02	2	\$4.05 / 0.36	38
Central Atlantic	\$5.67 / 1.23	3	\$4.03 / 0.27	51
Lower Atlantic	\$4.13 / 0.19	11	\$3.96 / 0.24	55
Midwest	\$4.35 / 0.46	4	\$4.06 / 0.23	106
Gulf Coast	\$3.77 / 0.25	3	\$4.01 / 0.16	19
Rocky Mountain	\$4.40 / 0.34	7	\$4.20 / 0.16	44
West Coast	\$4.46 / 0.45	24	\$4.47 / 0.27	73
<b>NATIONAL AVERAGE</b>	<b>\$4.39 / 0.56</b>	<b>54</b>	<b>\$4.13 / 0.30</b>	<b>386</b>

As Table 10 illustrates, the cost of B99/B100 is more than the cost of diesel fuel per gallon in majority of the regions for which data was collected, ranging from about 24 cents less than diesel in the Gulf Coast region, up to \$1.64 more than diesel in the Central Atlantic region. On average across the nation, B99/B100 is about 26 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 for most areas in this 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 diesel 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 high-level biodiesel blend data points in the current report. Where data was available for this report, prices for B99/B100 (per gallon) were most favorable in the West Coast region, as well as in states located in the Lower Atlantic, Midwest, New England, and Gulf Coast regions.



*Tech Note: B100 contains about 10% less energy (BTUs) per volume than diesel. The appendix at the end of this report provides conversion factors for calculating B100 prices on a GGE and DGE basis.*

## COMPARISON OF PRICES OF THIS REPORT VERSUS LAST REPORT

Table 11 below summarizes the average prices collected for this report by region, and compares them to prices collected in the Price Report from July 2012. It should be noted that a portion of the price changes could be attributed to differing sample sizes and locations between the two reports.

**Table 11. Comparison of Prices, Last Price Report versus Current Price Report**

		<i>Price for October 2012 Period</i>	<i>Price for July 2012 Period</i>	<i>Price Differential October vs. July</i>
<i>Gasoline (\$ per gallon)</i>	<i>National Average</i>	\$3.82	\$3.52	\$0.30 / 8%
	New England	\$3.93	\$3.70	\$0.23 / 6%
	Central Atlantic	\$3.90	\$3.48	\$0.42 / 12%
	Lower Atlantic	\$3.66	\$3.42	\$0.24 / 7%
	Midwest	\$3.77	\$3.48	\$0.29 / 8%
	Gulf Coast	\$3.53	\$3.29	\$0.24 / 7%
	Rocky Mountain	\$3.74	\$3.49	\$0.25 / 7%
	West Coast	\$4.26	\$3.71	\$0.55 / 15%
	<i>Diesel (\$ per gallon)</i>	<i>National Average</i>	\$4.13	\$3.75
New England	\$4.05	\$3.84	\$0.21 / 5%	
Central Atlantic	\$4.03	\$3.80	\$0.23 / 6%	
Lower Atlantic	\$3.96	\$3.67	\$0.29 / 8%	
Midwest	\$4.06	\$3.70	\$0.36 / 10%	
Gulf Coast	\$4.01	\$3.64	\$0.37 / 10%	
Rocky Mountain	\$4.20	\$3.66	\$0.54 / 15%	
West Coast	\$4.47	\$3.92	\$0.55 / 14%	
<i>Compressed Natural Gas (\$ per GGE)</i>	<i>National Average</i>	\$2.12	\$2.05	\$0.07 / 3%
	New England	\$2.47	\$2.48	(\$0.01) / 0%
	Central Atlantic	\$2.15	\$2.22	(\$0.07) / (3%)
	Lower Atlantic	\$1.86	\$1.71	\$0.15 / 8%
	Midwest	\$1.95	\$1.87	\$0.08 / 4%
	Gulf Coast	\$2.14	\$2.08	\$0.06 / 3%
	Rocky Mountain	\$1.71	\$1.70	\$0.01 / 0%
	West Coast	\$2.41	\$2.24	\$0.17 / 7%
	<i>Ethanol (E85) (\$ per gallon)</i>	<i>National Average</i>	\$3.47	\$3.24
New England		\$3.43	\$3.41	\$0.02 / 0%
Central Atlantic		\$3.50	\$3.26	\$0.24 / 8%
Lower Atlantic		\$3.45	\$3.28	\$0.17 / 5%
Midwest		\$3.46	\$3.22	\$0.24 / 7%
Gulf Coast		\$3.32	\$3.05	\$0.27 / 9%
Rocky Mountain		\$3.37	\$3.23	\$0.14 / 4%
West Coast		\$3.69	\$3.37	\$0.32 / 10%

Table 11. Comparison of Prices, Last Price Report versus Current Price Report

		<i>Price October 2012 Period</i>	<i>Price for July 2012 Period</i>	<i>Price Differential October vs. July</i>
<i>Propane (\$ per gallon)</i>	<i>National Average</i>	\$2.56	\$2.64	(\$0.08) / (3%)
	New England	\$3.07	\$3.09	(\$0.02) / (1%)
	Central Atlantic	\$2.51	\$2.46	\$0.05 / 2%
	Lower Atlantic	\$2.87	\$2.76	\$0.11 / 4%
	Midwest	\$2.47	\$2.45	\$0.02 / 1%
	Gulf Coast	\$1.90	\$2.13	(\$0.23) / (11%)
	Rocky Mountain	\$2.66	\$2.67	(\$0.01) / 0%
	West Coast	\$2.83	\$2.97	(\$0.14) / (5%)
	<i>Biodiesel (B20) (\$ per gallon)</i>	<i>National Average</i>	\$4.18	\$3.83
New England		\$3.84	\$3.72	\$0.13 / 3%
Central Atlantic		\$4.24	\$4.02	\$0.22 / 6%
Lower Atlantic		\$4.04	\$3.82	\$0.22 / 6%
Midwest		\$4.05	\$3.59	\$0.46 / 13%
Gulf Coast		\$4.26	\$3.75	\$0.51 / 14%
Rocky Mountain		\$4.27	\$3.78	\$0.49 / 13%
West Coast		\$4.41	\$4.04	\$0.37 / 9%
<i>Biodiesel (B99/B100) (\$ per gallon)</i>		<i>National Average</i>	\$4.39	\$4.23
	New England	\$3.94	\$3.90	\$0.04 / 1%
	Central Atlantic	\$5.67	\$5.24	\$0.43 / 8%
	Lower Atlantic	\$4.13	\$3.96	\$0.17 / 4%
	Midwest	\$4.35	\$3.61	\$0.74 / 20%
	Gulf Coast	\$3.77	\$3.33	\$0.44 / 13%
	Rocky Mountain	\$4.40	\$4.42	(\$0.02) / 0%
	West Coast	\$4.46	\$4.28	\$0.18 / 4%

## COMPARISON OF PRICES BY REGION FOR PUBLIC AND PRIVATE REFUELING STATIONS

Table 12 below summarizes the comparison of prices for all of the fuels included in this report, separated into averages for stations available only to selected fleets or privately-owned stations (private refueling stations) and stations open to the public (public refueling stations). Private fleet fueling stations can typically negotiate prices lower than retail public stations, if they are willing to commit to purchasing large quantities of fuel over an extended period of time. However, private fleet pricing can sometimes be higher than retail public stations if there are unusual circumstances (remote locations, sites that use very small quantities of fuel, or special contracts where unique billing, accounting, or fleet service management fees are rolled into the price of the fuel).

As with the other prices in this report, all of these averages are prices with state and federal taxes included, using the protocols outlined at the beginning of this document.

**Table 12. Comparison of Prices by Fuel Type, Region, and Station Type**

		<i>Private Refueling Station Average</i>	<i>Public Refueling Station Average</i>
		<i>Price</i>	<i>Price</i>
<i>Gasoline (\$/gallon)</i>	<i>National Average</i>	\$3.78	\$3.82
	New England	\$3.60	\$4.00
	Central Atlantic	\$3.72	\$3.97
	Lower Atlantic	\$3.57	\$3.67
	Midwest	\$--	\$3.76
	Gulf Coast	\$--	\$3.53
	Rocky Mountain	\$3.75	\$3.74
	West Coast	\$4.30	\$4.26
<i>Diesel (\$/gallon)</i>	<i>National Average</i>	\$3.91	\$4.16
	New England	\$3.61	\$4.11
	Central Atlantic	\$3.97	\$4.06
	Lower Atlantic	\$3.66	\$4.01
	Midwest	\$--	\$4.06
	Gulf Coast	\$--	\$4.01
	Rocky Mountain	\$4.10	\$4.20
	West Coast	\$4.27	\$4.48
<i>Natural Gas (CNG) (\$/GGE)</i>	<i>National Average</i>	\$1.79	\$2.25
	New England	\$2.14	\$2.54
	Central Atlantic	\$1.96	\$2.38
	Lower Atlantic	\$1.96	\$1.82
	Midwest	\$1.93	\$1.96
	Gulf Coast	\$1.49	\$2.20
	Rocky Mountain	\$1.52	\$1.87
	West Coast	\$1.73	\$2.48
<i>Ethanol (E85) (\$/gallon)</i>	<i>National Average</i>	\$3.44	\$3.47
	New England	\$--	\$3.43
	Central Atlantic	\$3.53	\$3.50
	Lower Atlantic	\$3.25	\$3.46
	Midwest	\$3.36	\$3.46
	Gulf Coast	\$--	\$3.32
	Rocky Mountain	\$3.52	\$3.36
	West Coast	\$3.49	\$3.70
<i>Propane (\$/gallon)</i>	<i>National Average</i>	\$1.76	\$2.72
	New England	\$3.10	\$3.06
	Central Atlantic	\$1.60	\$2.78
	Lower Atlantic	\$1.84	\$2.90
	Midwest	\$1.81	\$2.49
	Gulf Coast	\$1.56	\$2.36
	Rocky Mountain	\$1.61	\$2.68
	West Coast	\$2.44	\$2.88

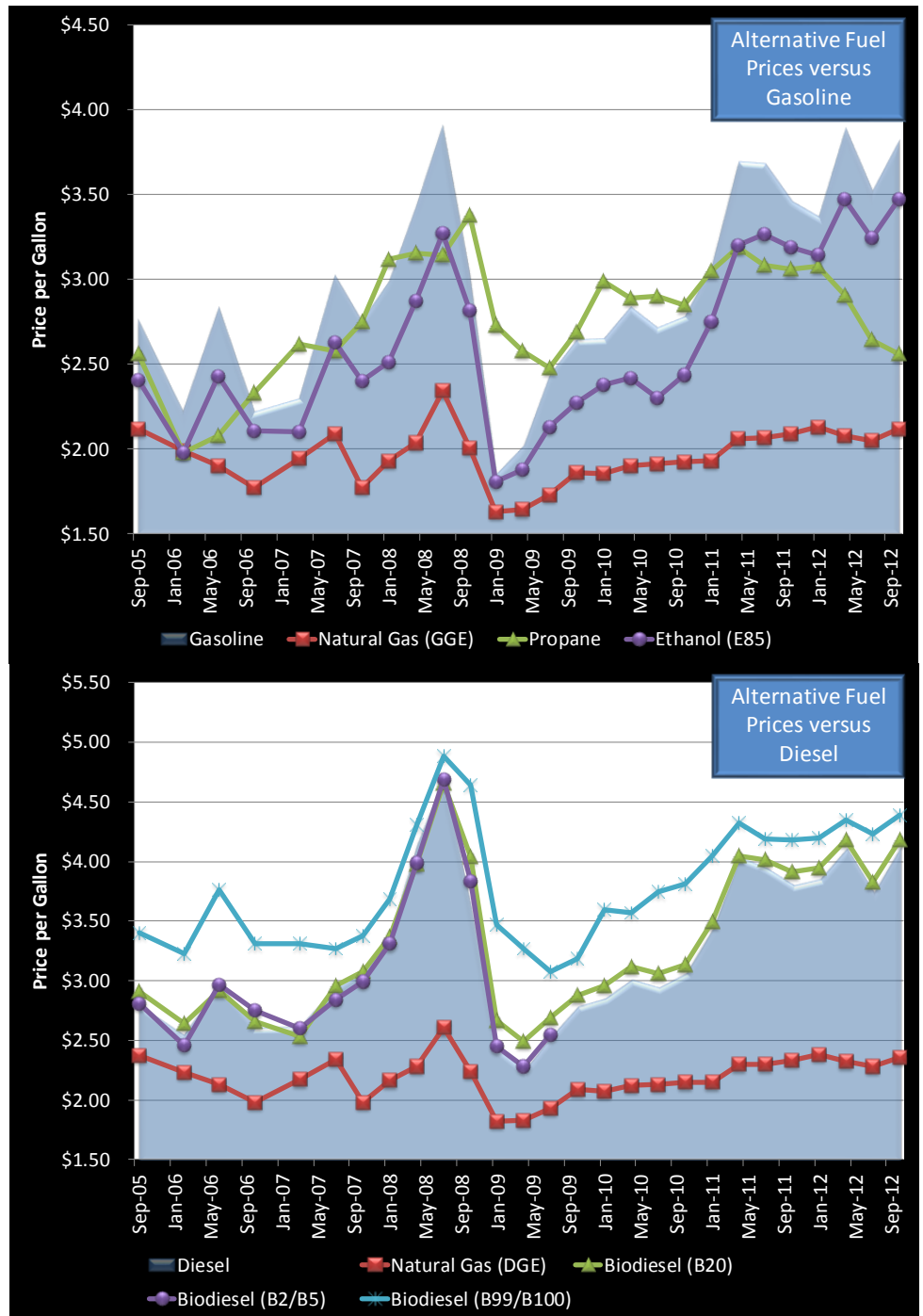


**Table 12. Comparison of Prices by Fuel Type, Region, and Station Type**

		<i>Private Refueling Station Average Price</i>	<i>Public Refueling Station Average Price</i>
<i>Biodiesel (B20) (\$/gallon)</i>	<i>National Average</i>	\$4.08	\$4.21
	New England	\$3.65	\$4.07
	Central Atlantic	\$4.20	\$4.38
	Lower Atlantic	\$3.90	\$4.06
	Midwest	\$3.75	\$4.06
	Gulf Coast	\$--	\$4.26
	Rocky Mountain	\$4.03	\$4.30
	West Coast	\$4.27	\$4.45
<i>Biodiesel (B99/B100) (\$/gallon)</i>	<i>National Average</i>	\$4.43	\$4.39
	New England	\$--	\$3.90
	Central Atlantic	\$--	\$5.67
	Lower Atlantic	\$--	\$4.13
	Midwest	\$--	\$4.35
	Gulf Coast	\$3.81	\$3.75
	Rocky Mountain	\$--	\$4.40
	West Coast	\$4.74	\$4.44

### HISTORICAL ALTERNATIVE FUEL PRICES FROM PREVIOUS REPORTS

The graphs on this page illustrate the historical prices for the alternative fuels included in these reports (specifically natural gas, propane, ethanol (E85), and biodiesel) relative to gasoline and diesel. These graphs include prices collected as part of the current Price Report activity, which began in September 2005. Natural gas (in GGE), propane, and ethanol (E85) have been graphed against gasoline prices, while natural gas (in DGE) and biodiesel have been graphed against diesel prices.



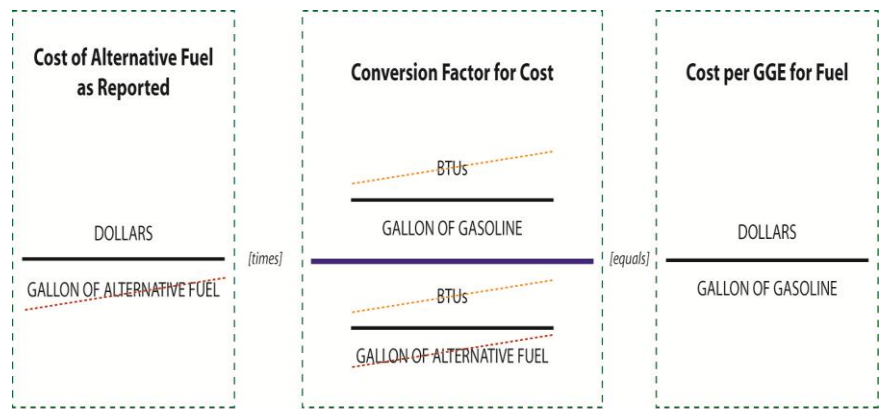
## ILLUSTRATION OF CONVERSION FACTORS FOR FUELS

The standard lower heating values for fuels from the Transportation Energy Data Book 30 are listed below.

	Lower Heating Value
Gasoline	115,400 BTU/gal
Diesel	128,700 BTU/gal
Compressed Natural Gas	960 BTU/cubic foot
Ethanol	75,700 BTU/gal
Propane	83,500 BTU/gal
Biodiesel	117,100 BTU/gal

Conversion factors to establish prices in dollars per gasoline gallon equivalent are illustrated below, and were developed using the lower heating values outlined above. The conversion factors are derived in the manner shown in the graphic to the right.

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 gallon equivalent, multiply the price per gallon by the conversion factor.



Note that the units of BTU and Gallon of Alternative Fuel cancel out, leaving Dollars per Gallon of Gasoline (or GGE)

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

Conversion factors to establish prices in dollars per diesel gallon equivalent 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 gallon equivalent, 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 (B100)	1.10

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## 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:

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