

Clean Cities Alternative Fuel Price Report

April 2015



U. S. Department of Energy

WELCOME!

Welcome to the April 2015 issue of the 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 and conventional fuels in the United States. This issue summarizes prices that were submitted between April 1, 2015 and April 15, 2015 by Clean Cities coordinators, fuel providers, and other Clean Cities stakeholders.

WHAT'S NEW IN THIS ISSUE?

Beginning with this issue, a number of changes are being implemented that will enhance the report and make it more user-friendly. During the past year or so, Clean Cities coordinators, consumer groups, and end-users from the alternative fuels industry have provided feedback on the types of changes that would be most beneficial. DOE has been working closely with New West Technologies and the National Renewable Energy Laboratory (NREL) to implement your suggestions.

Revised Energy Content Values

The energy content values for all fuels covered by the Alternative Fuel Price Report have been updated, to be consistent with the latest edition of the Transportation Energy Data Book, produced by Oak Ridge National Laboratory. It can be found at http://cta.ornl.gov/data/tedb33/Edition33_Appendix_B.pdf. See Table B-4.

E85 Updates

For the April report, changes have been made to the way in which the energy content of E85 is calculated. In past issues, E85 has been treated as a mixture of 85% ethanol and 15% gasoline, consistent with the definition found in the Energy Policy Act of 1992. In the ensuing years since that legislation was passed, however, a number of factors have changed, causing a reevaluation of our methodology. Today, most gasoline available throughout the United States is a blend of 90% gasoline and up to 10% ethanol, or E10. Additionally, the E85 that is sold in the United States today actually contains, on average, approximately 70% ethanol. Beginning with the April 2015 Alternative Fuel Price Report, therefore, E85 energy content will be calculated as $(.70)(E100 \text{ energy content}) + (.30)(E0 \text{ energy content})$, to more closely reflect the actual energy content of E85 fuel available today.

Falling Gasoline/Diesel prices

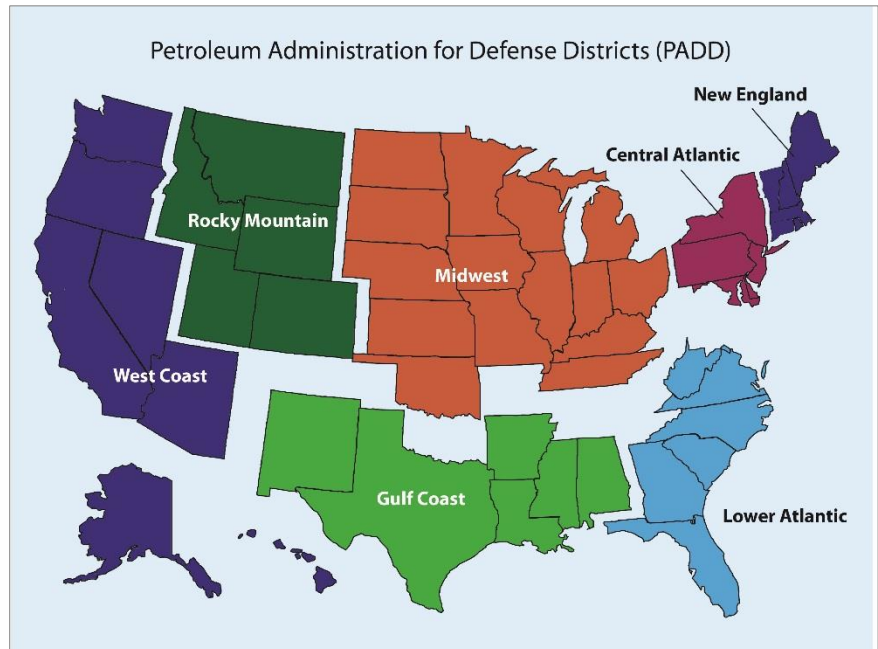
There is insufficient data to determine whether the recent drops in gasoline and diesel prices represent a trend or pattern. With the Energy Information Administration's estimates for future oil prices in 2025 ranging from \$75/barrel to more than \$150/barrel, however, it is very likely that oil prices will continue to be extremely volatile. Stay tuned as additional updates to the Alternative Fuel Price Report are rolled out.

Looking Ahead

In the coming months, plans include giving the report a fresh, new look. Creation of a system that allows for additional, customizable, on-line reports that can be downloaded by the individual users is also in the works. We look forward to hearing from you as we implement these upgrades.

METHODOLOGY

- Clean Cities coordinators, fuel providers, and other key stakeholders provide prices for fuels in their areas on a voluntary basis.
- Prices were submitted for all major alternative fuels currently in widespread use, i.e. natural gas, propane, biodiesel, and ethanol.
- Prices were submitted for conventional fuels at stations that also sell alternative fuels, or at nearby stations.
- Prices from public and private refueling stations are included.¹
- Prices were then averaged to determine regional price trends by fuel and variability in fuel price within and among regions.²
- Consistent with the U.S. Energy Information Administration (EIA) fuel price reporting format, prices are grouped by the Petroleum Administration for Defense Districts (PADD); the districts are illustrated in the map at right.



This report's prices represent retail, at-the-pump sales prices for each fuel, including federal and state motor fuel taxes. In some cases, prices were submitted by government or utility refueling facilities and these taxes were not included in the prices reported to Clean Cities. In these instances, although these users are not required to pay these taxes, the appropriate federal and state taxes were added to the reported prices to provide a more representative basis for comparison. 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 liquefied petroleum gas (LPG or propane). These flat fees are not considered in the prices reported in these pages.

¹ Public refueling stations are open to the public, while private fueling stations are privately-owned or available only to selected fleets.

² Fuel price averages for this report are determined by simply averaging the individual data points received. A comparison of average fuel prices for private and for public stations by region can be found on pages 14-15.

SUMMARY OF CURRENT REPORT INFORMATION

Table 1 shows overall nationwide average prices for conventional and alternative fuels.³ As this table illustrates, alternative fuel prices relative to conventional fuels vary, with some (B20, B99-B100) higher and some (CNG, E85) lower, on a per gallon basis. All average fuel prices, except gasoline and propane, declined relative to the prices in the January 2015 report. On an energy-equivalent basis, CNG is about \$.33 per GGE less than gasoline. On a per-gallon basis, E85 is about \$.29 less than gasoline, and propane is about \$.51 higher than gasoline, but only \$.05 higher than diesel. B20 prices are higher than regular diesel by about \$.04 per gallon, while B99/B100 blends have a cost of about \$.89 per gallon more than regular diesel.⁴

Relative to the last report from January 2015, the average prices for the liquid fuels ranged from a decrease \$.26 per gallon for B20 to an increase of \$.12 per gallon for gasoline. The gaseous fuel prices ranged from a decrease of \$.02 per GGE for CNG to an increase of \$.01 per gallon for propane. It should be noted that the price changes occur as a result of a number of factors, including an actual change in price, a slightly differing sample of prices (both location and quantity), and seasonal variations in demand.

Prices in this report were submitted and are reported in the units in which they are typically sold (dollars per gallon or dollars per gasoline gallon equivalent). Because these fuels have differing energy contents per gallon, the price paid per unit of energy content can differ somewhat from the price paid per gallon. Table 2 shows 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 (MBtu) of energy. This calculation uses the nominal lower heating values in BTUs per gallon of fuel from the Oak Ridge National Laboratory's Transportation Energy Data Book.⁵ Prices for the alternative fuels in terms of price per gallon equivalent are generally higher than their price per gallon because of their lower energy content per gallon.⁶ However, consumer interest in alternative fuels generally increases when the alternative fuel price is less than the conventional fuel price and as the price differential per gallon increases, even if that differential does not directly translate to savings on an energy-equivalent basis.

Propane prices include information from both "primary" and "secondary" stations. Primary stations have dedicated vehicle services and tend to be less expensive than secondary stations, which mostly serve the propane tank and bottle market.

Table 1. Overall Average Fuel Prices*

| | Nationwide Average Fuel Price April 2015 | Nationwide Average Fuel Price January 2015 | Change in Price January 2015 – April 2015 | Units of Measurement |
|----------------------|--|--|---|----------------------|
| Gasoline (Regular) | \$2.42 | \$2.30 | \$0.12 | per gallon |
| Diesel | \$2.88 | \$3.06 | (\$0.18) | per gallon |
| CNG | \$2.09 | \$2.11 | (\$0.02) | per GGE |
| Ethanol (E85) | \$2.13 | \$2.21 | (\$0.08) | per gallon |
| Propane** | \$2.93 | \$2.92 | \$0.01 | per gallon |
| Biodiesel (B20) | \$2.92 | \$3.18 | (\$0.26) | per gallon |
| Biodiesel (B99-B100) | \$3.77 | \$4.02 | (\$0.25) | per gallon |

*Includes private and public stations

**Includes primary and secondary stations

Table 2. April 2015 Average Fuel Prices on Energy-Equivalent Basis*

| | Nationwide Average Price in Gasoline Gallon Equivalents (\$/GGE) | Nationwide Average Price in Diesel Gallon Equivalents (\$/DGE) | Nationwide Average Price in Dollars per Million Btu (\$/MBtu) |
|----------------------|--|--|---|
| Gasoline | \$2.42 | \$2.73 | \$21.17 |
| Diesel | \$2.56 | \$2.88 | \$22.38 |
| CNG | \$2.09 | \$2.37 | \$18.29 |
| Ethanol (E85) | \$2.77 | \$3.13 | \$24.31 |
| Propane** | \$4.01 | \$4.51 | \$35.09 |
| Biodiesel (B20) | \$2.62 | \$2.97 | \$23.10 |
| Biodiesel (B99-B100) | \$3.69 | \$4.14 | \$32.19 |

*Includes public and private stations

**Includes primary and secondary stations

³ A very small sample (5 points) of hydrogen information was received with an average price of \$9.41 per gasoline gallon equivalent.

⁴ 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.

⁵ A listing of the conversion factors used appears as an appendix at the end of this report.

⁶ For ethanol flexible-fuel vehicles (FFVs), 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 that 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

Table 3 shows average prices for gasoline and diesel as submitted by Clean Cities coordinators and other stakeholders (supplemented where necessary with other EIA reference sources for conventional fuels). These prices represent refueling stations selling both conventional fuels and alternative fuels, as well as conventional refueling stations near alternative fuel stations. There were 660 price points submitted for gasoline and 505 for diesel. The average price for gasoline ranged from a low of \$2.20 per gallon in the Gulf Coast region to a high of \$2.91 per gallon in the West Coast region. Diesel prices ranged from \$2.64 per gallon in the Gulf Coast region to \$3.29 per gallon in the New England region. Because prices for conventional fuels were submitted from stations and regions providing alternative fuel price information, data collection was not uniform across the regions of the country. However, the information is representative of refueling stations selling both alternative fuels and conventional 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 | Number of Data Points | Average Price | Number of Data Points |
| New England | \$2.50 | 36 | \$3.29 | 30 |
| Central Atlantic | \$2.39 | 93 | \$2.97 | 92 |
| Lower Atlantic | \$2.35 | 65 | \$2.81 | 74 |
| Midwest | \$2.24 | 213 | \$2.65 | 110 |
| Gulf Coast | \$2.20 | 43 | \$2.64 | 27 |
| Rocky Mountain | \$2.27 | 80 | \$2.72 | 40 |
| West Coast | \$2.91 | 130 | \$3.03 | 132 |
| NATIONAL AVERAGE | \$2.42 | 660 | \$2.88 | 505 |

Table 4 shows average prices as provided by EIA on the petroleum information section of its website.⁷ These prices are averages of prices from a selection of 900 gasoline and 350 diesel retail fuel stations across the country. There was less variation when comparing Clean Cities prices to EIA prices for this report than there was in the last report. Prices differed by \$.07 or less for gasoline in all regions except New England, where it differed by \$.14 per gallon. Diesel prices varied by \$.03 per gallon or less for the Gulf Coast, Lower Atlantic, Midwest and Rocky Mountain regions, but for the Central Atlantic, New England and West Coast regions, the price difference ranged from \$.11 to \$.18 per gallon. Comparisons in this document between conventional and alternative fuel prices will be made using prices submitted by Clean Cities sources wherever possible, as these prices are most representative of stations selling both conventional and alternative fuels.

Table 4. EIA Gasoline and Diesel Average Prices

| | Gasoline Average Price from EIA, Week of 4/14/15 | Diesel Average Price from EIA, Week of 4/14/15 |
|-------------------------|--|--|
| New England | \$2.36 | \$3.11 |
| Central Atlantic | \$2.41 | \$3.12 |
| Lower Atlantic | \$2.31 | \$2.79 |
| Midwest | \$2.31 | \$2.68 |
| Gulf Coast | \$2.18 | \$2.64 |
| Rocky Mountain | \$2.32 | \$2.73 |
| West Coast | \$2.95 | \$2.92 |
| NATIONAL AVERAGE | \$2.41 | \$2.78 |

⁷ <http://www.eia.doe.gov/petroleum/>

COMPRESSED NATURAL GAS (RELATIVE TO GASOLINE)

Table 5 shows average prices for compressed natural gas (CNG) for vehicle use, grouped by region, as well as regular gasoline prices, as provided by Clean Cities representatives. These prices were submitted by Clean Cities coordinators, fuel providers, and other stakeholders from across the country, on a voluntary basis.

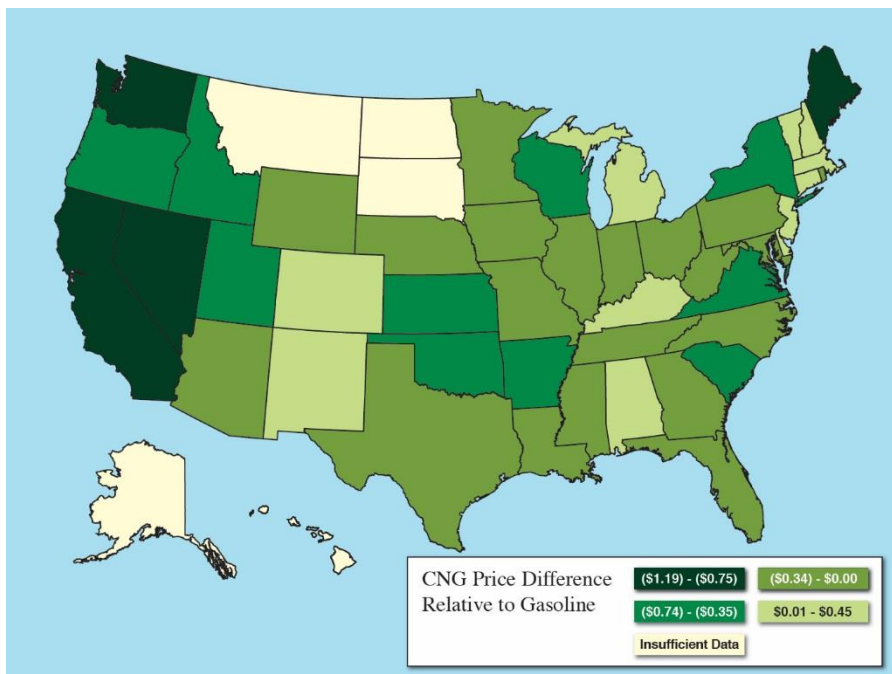
As Table 5 illustrates, CNG has a lower average price than gasoline for all regions of the country, except the New England region, where CNG prices exceeded gasoline prices by \$.02 per GGE. On average, CNG costs about \$.33 less than gasoline on a per GGE basis.

Table 5. Compressed Natural Gas and Gasoline 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 | Number of Data Points | Average Price | Number of Data Points |
| New England | \$2.52 | 28 | \$2.50 | 36 |
| Central Atlantic | \$2.08 | 87 | \$2.39 | 93 |
| Lower Atlantic | \$1.86 | 50 | \$2.35 | 65 |
| Midwest | \$2.10 | 103 | \$2.24 | 213 |
| Gulf Coast | \$1.99 | 50 | \$2.20 | 43 |
| Rocky Mountain | \$1.87 | 107 | \$2.27 | 80 |
| West Coast | \$2.33 | 126 | \$2.91 | 130 |
| NATIONAL AVERAGE | \$2.09 | 551 | \$2.42 | 660 |

SPECIAL NOTATION: There is insufficient data to determine if the recent drop in gasoline prices represents a trend or pattern. CNG prices have been consistently stable for a long period of time, while both gasoline and diesel prices have been volatile. During the past decade there have only been 5 instances when some of the regional gasoline prices in this report have dipped below CNG prices for a short time.

The map to the right illustrates price differentials by state for natural gas relative to gasoline, based on differentials between natural gas and gasoline prices for each state (as opposed to the regional averages illustrated in Table 5). In this map, negative numbers represent prices for CNG lower than gasoline. States not highlighted with a color did not have any CNG data points in the current report. As the map illustrates, CNG prices (per GGE) were favorable relative to gasoline in most states for which pricing data was reported, with the most favorable pricing found in California, Maine, Nevada, Washington D.C. and Washington State.



Tech Note: Prices for CNG were provided by the individual stakeholders in GGEs from the “price at the pump.” It should be noted that the internal conversion factor between the physical quantities of gas delivered and GGE was not recorded for each of the refueling stations. Regional differences in gas heat content relative to the internal pump conversion factor may change the price per GGE, but this report did not determine these differences.

COMPRESSED NATURAL GAS (RELATIVE TO DIESEL)⁸

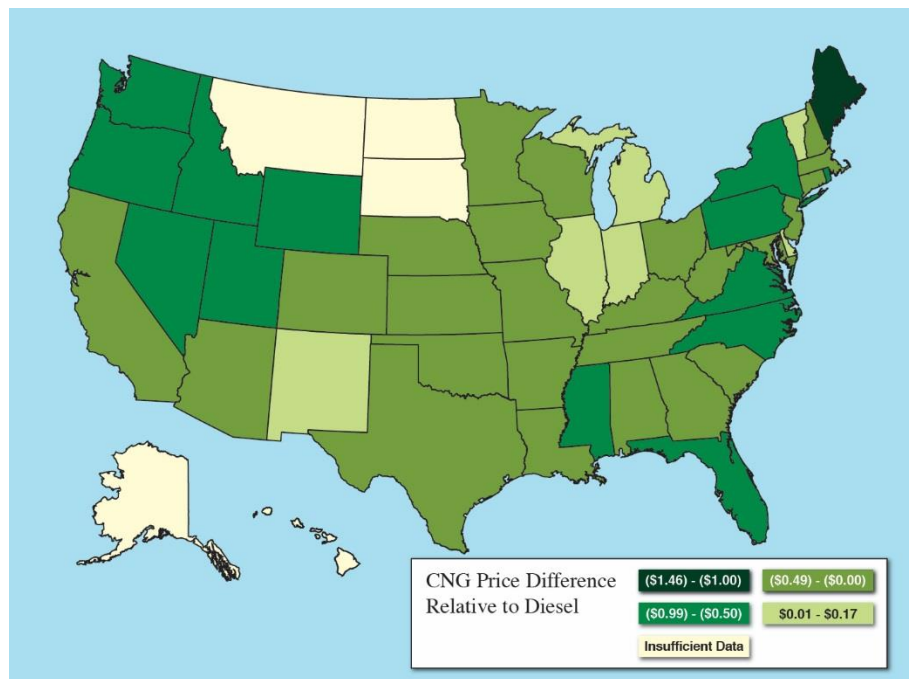
Table 6 shows average prices for compressed natural gas (CNG) for vehicle use, grouped by region, as well as conventional diesel fuel prices, as provided by Clean Cities representatives and supplemental sources. These prices were submitted by Clean Cities coordinators, fuel providers, and other stakeholders from across the country, on a voluntary basis. The CNG prices in Table 6 are based upon the same group of prices as for Table 5, but converted to a cost per DGE basis instead of a cost per GGE, to compare directly with diesel prices.

Table 6. Compressed Natural Gas and Diesel 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 | Number of Data Points | Average Price | Number of Data Points |
| New England | \$2.85 | 28 | \$3.29 | 30 |
| Central Atlantic | \$2.35 | 87 | \$2.97 | 92 |
| Lower Atlantic | \$2.10 | 50 | \$2.81 | 74 |
| Midwest | \$2.37 | 103 | \$2.65 | 110 |
| Gulf Coast | \$2.25 | 50 | \$2.64 | 27 |
| Rocky Mountain | \$2.11 | 107 | \$2.72 | 40 |
| West Coast | \$2.64 | 126 | \$3.03 | 132 |
| NATIONAL AVERAGE | \$2.37 | 551 | \$2.88 | 505 |

As Table 6 illustrates, CNG has a lower average price than diesel for all regions of the country, with the largest difference (\$.71 per DGE) being in the Lower Atlantic region. On average, CNG costs about \$.51 less than diesel on a per DGE basis.

The map to the right illustrates price differentials by state for CNG relative to diesel, based on differentials between CNG prices and diesel prices for each state (as opposed to the regional averages illustrated in Table 6). In this map, negative numbers represent prices for CNG lower than prices for diesel. States not highlighted with a color did not have any CNG data points in the current report. CNG prices relative to diesel were favorable for most states for which pricing data was reported, as diesel prices have not fallen as much as gasoline prices have in recent months.



⁸ A total of 42 liquefied natural gas (LNG) price points were submitted, with an average fuel price of \$2.54 per DGE. Because of the small number of price points, this data is not reflected in the report.

ETHANOL (E85)

Table 7 shows average prices for E85 (a fuel blend of up to 85% ethanol and 15% gasoline), grouped by region, as well as regular gasoline prices, as provided by Clean Cities representatives. These prices were submitted by Clean Cities coordinators, fuel providers, and other stakeholders from across the country, on a voluntary basis.

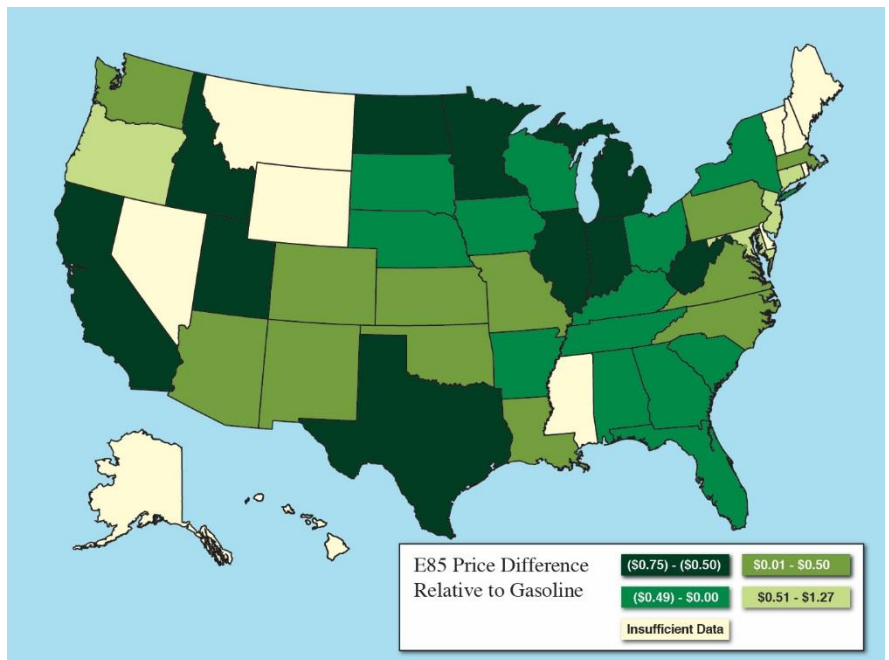
See What's New in This Issue? on page 2 and Illustration of Conversion Factors for Fuels on page 17 for an update on how the energy content of E85 is being calculated.

Table 7. Ethanol (E85) and Gasoline 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 | Number of Data Points | Average Price | Number of Data Points |
| New England | \$2.69 | 3 | \$2.50 | 36 |
| Central Atlantic | \$2.45 | 100 | \$2.39 | 93 |
| Lower Atlantic | \$2.17 | 71 | \$2.35 | 65 |
| Midwest | \$1.92 | 204 | \$2.24 | 213 |
| Gulf Coast | \$1.91 | 82 | \$2.20 | 43 |
| Rocky Mountain | \$1.96 | 66 | \$2.27 | 80 |
| West Coast | \$2.56 | 84 | \$2.91 | 130 |
| NATIONAL AVERAGE | \$2.13 | 610 | \$2.42 | 660 |

As Table 7 illustrates, E85 has a lower average price per gallon than regular gasoline in all regions except the Central Atlantic and New England regions, where E85 was more expensive than gasoline, by \$.06 and \$.19 per gallon, respectively. On average, E85 is about \$.29 lower in price than regular gasoline on a per-gallon basis.

The map to the right illustrates price differentials between E85 and regular gasoline by state, based on differentials between E85 and gasoline prices for each state (as opposed to the regional averages illustrated in Table 7). In this map, negative numbers represent prices for E85 lower than for gasoline, and positive numbers represent prices 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. As the map illustrates, E85 prices compared favorably with gasoline prices, on a per gallon basis, in more than half the states for which data was submitted.



Tech Note: Ethanol (E85) contains about 30% less energy (BTUs) per volume than gasoline. Flexible fuel vehicles (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 www.fueleconomy.gov.

PROPANE

Table 8 shows average prices for propane for vehicle use grouped by region, as well as regular gasoline prices, as provided by Clean Cities representatives. These prices were submitted by Clean Cities coordinators, fuel providers, and other stakeholders from across the country, 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.

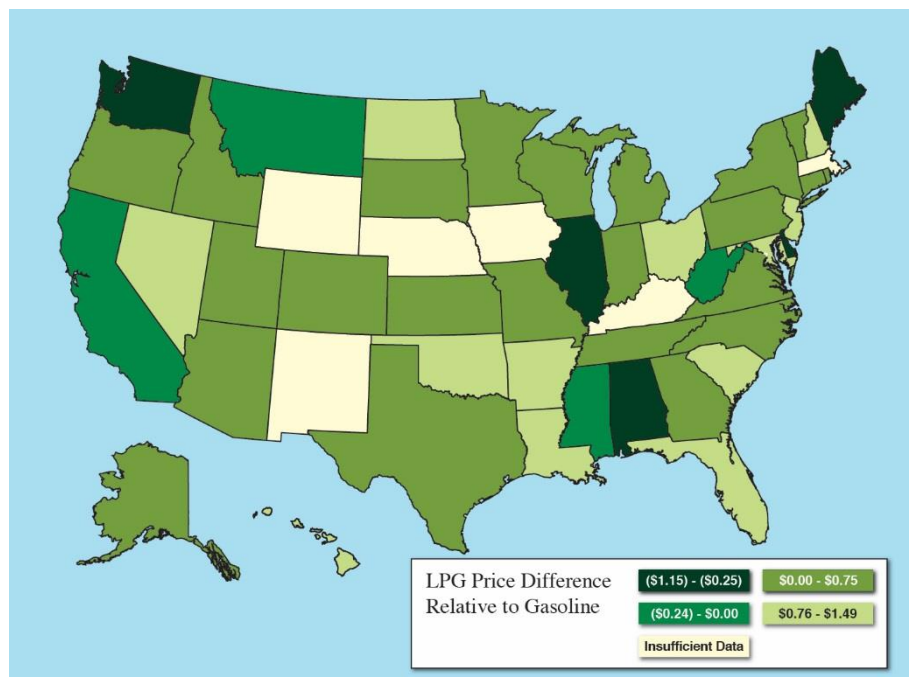
Table 8. Propane and Gasoline Average Prices by Region from Clean Cities Sources

| | Propane Information Reported by Clean Cities (\$ per gal) | | Regular Gasoline Information Reported by Clean Cities (\$ per gal) | |
|-------------------------|--|-----------------------|---|-----------------------|
| | Average Price | Number of Data Points | Average Price | Number of Data Points |
| New England | \$3.12 | 17 | \$2.50 | 36 |
| Central Atlantic | \$2.85 | 50 | \$2.39 | 93 |
| Lower Atlantic | \$2.97 | 107 | \$2.35 | 65 |
| Midwest | \$2.64 | 73 | \$2.24 | 213 |
| Gulf Coast | \$2.86 | 70 | \$2.20 | 43 |
| Rocky Mountain | \$3.11 | 77 | \$2.27 | 80 |
| West Coast | \$2.99 | 129 | \$2.91 | 130 |
| NATIONAL AVERAGE | \$2.93 | 523 | \$2.42 | 660 |

As Table 8 illustrates, for this reporting period, average propane prices are higher than gasoline in all regions of the country on a per-gallon basis, ranging from \$.08 per gallon higher in the West Coast region to \$.84 per gallon higher in the Rocky Mountain region. Overall, propane was about \$.51 more than gasoline on a per-gallon basis. Propane prices in this report are from both private fleet refueling stations and public refueling sites that can provide propane for vehicles and for other uses.⁹

The map to the right illustrates price differentials between propane and regular gasoline on a per-gallon basis, based on differentials between propane and gasoline prices for each state (as opposed to the regional averages illustrated in Table 8). In this map, negative numbers represent prices for propane lower than 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. As the map illustrates, the most favorable propane prices were found in Alabama, Delaware, Illinois, Maine and Washington State.

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.



⁹ Because many propane retailers provide fuel for non-vehicle uses (camping stoves, gas grills, etc.), the National Renewable Energy Laboratory (NREL) has worked with suppliers to clarify the differences. On the AFDC Station Locator website (<http://www.afdc.energy.gov/locator/stations/>) each public propane station is designated as a "primary" or "secondary" service type. Both types are able to fuel vehicles. However, stations designated as "primary" have indicated they have facilities and billing procedures specifically designed for vehicle customers. They may also offer special vehicle pricing and most accept major credit cards, similar to traditional gasoline/diesel retailers. Propane pricing reported in this guide reflects a sampling of both primary and secondary stations.

BIODIESEL BLENDS: B20

Table 9 shows average prices for B20, a 20% biodiesel/80% diesel fuel blend, grouped by region, as well as regular diesel prices, as provided by Clean Cities representatives. These prices were submitted by Clean Cities coordinators, fuel providers, and other stakeholders from across the country, on a voluntary basis.

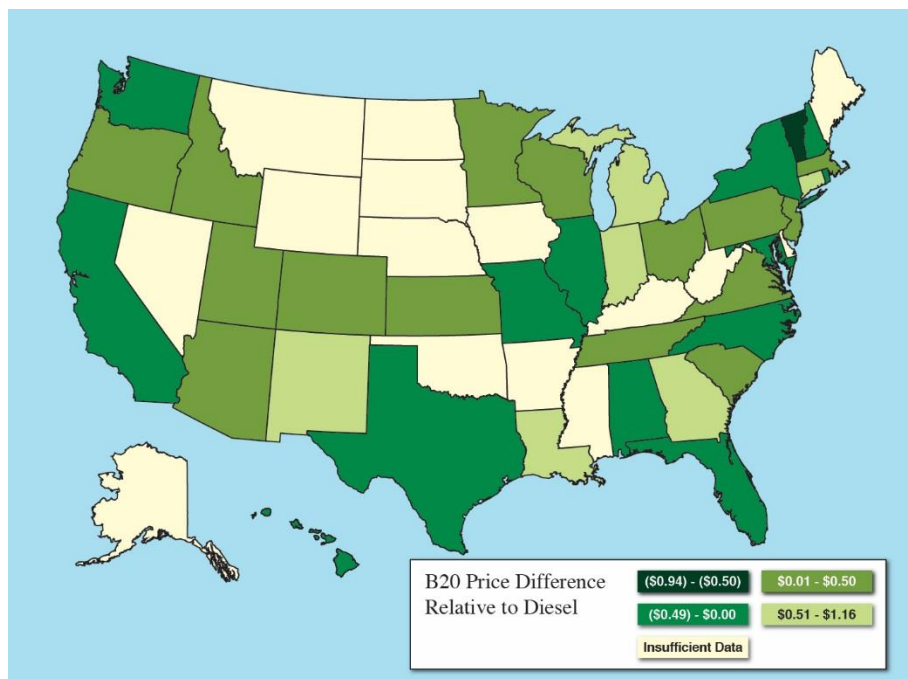
As Table 9 illustrates, average prices for B20 are higher than conventional diesel prices in the Gulf Coast, Lower Atlantic, Midwest, and Rocky Mountain regions. B20 prices were lower than diesel prices in the Central Atlantic, New England and West Coast regions, by \$.15, \$.16 and \$.01 per gallon, respectively. On average in the U.S., biodiesel in a B20 blend costs about \$.04 more per gallon than conventional diesel fuel, based on current information.

The map to the right illustrates price differentials between B20 and diesel on a per-gallon basis, based on differentials between B20 and diesel prices for each state (as opposed to the regional averages illustrated in Table 9). In this map, negative numbers represent prices for B20 lower than 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 the most favorable pricing (per gallon) in Vermont.

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) and Diesel 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 | Number of Data Points | Average Price | Number of Data Points |
| New England | \$3.14 | 8 | \$3.29 | 30 |
| Central Atlantic | \$2.81 | 29 | \$2.97 | 92 |
| Lower Atlantic | \$2.94 | 25 | \$2.81 | 74 |
| Midwest | \$2.78 | 31 | \$2.65 | 110 |
| Gulf Coast | \$2.82 | 10 | \$2.64 | 27 |
| Rocky Mountain | \$2.96 | 10 | \$2.72 | 40 |
| West Coast | \$3.02 | 49 | \$3.03 | 132 |
| NATIONAL AVERAGE | \$2.92 | 162 | \$2.88 | 505 |



BIODIESEL BLENDS: B99/B100

Table 10 shows average prices for high-level blends of biodiesel (99% or 100% biodiesel with diesel fuel), grouped by region, as well as regular diesel prices, as provided by Clean Cities representatives. These prices were submitted by Clean Cities coordinators, fuel providers, and other stakeholders from across the country, on a voluntary basis.

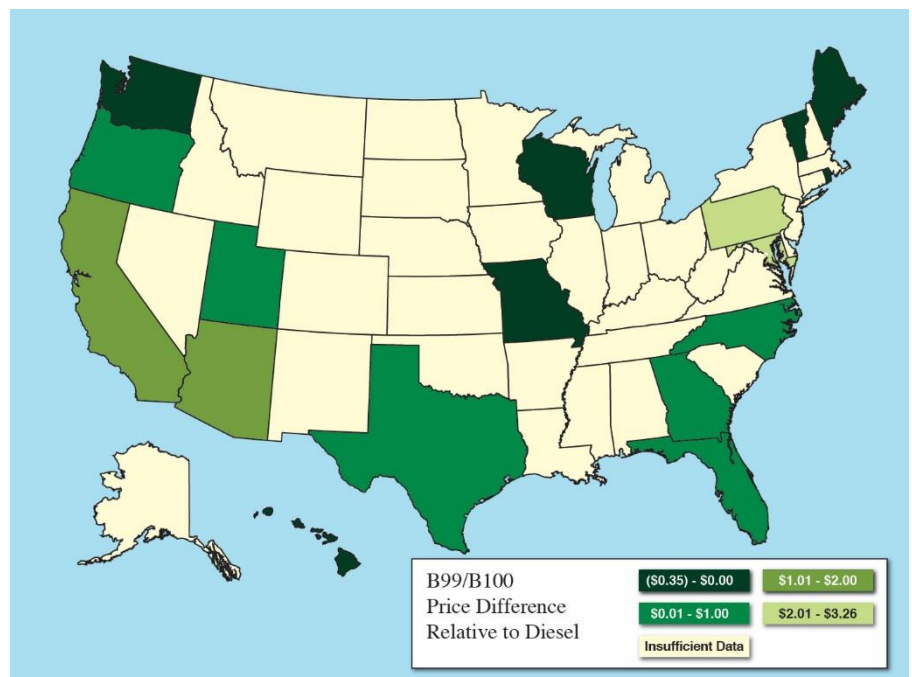
The average price of B99/B100 is higher than the price of conventional diesel fuel on a per gallon basis in all regions, except for the Midwest and New England regions, ranging from \$.27 per gallon higher in the Gulf Coast region to \$2.95 per gallon higher in the Central Atlantic region. Prices for B99/B100 were lower than conventional diesel in the Midwest and New England by \$.16 and \$.12 per gallon, respectively. On average across the nation, the price of B99/B100 is about \$.89 per gallon higher than the price of conventional diesel.

The map to the right illustrates price differentials between high-level biodiesel blends and regular diesel on a per-gallon basis, based on differentials between biodiesel and diesel prices for each state (as opposed to the regional averages illustrated in Table 10). In this map, negative numbers represent prices for these blends that are lower than 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 Hawaii, Maine, Missouri, Rhode Island, Vermont, Washington and Wisconsin.

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.

Table 10. Biodiesel (B99/B100) and Diesel 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 | Number of Data Points | Average Price | Number of Data Points |
| New England | \$3.17 | 4 | \$3.29 | 30 |
| Central Atlantic | \$5.92 | 3 | \$2.97 | 92 |
| Lower Atlantic | \$3.79 | 15 | \$2.81 | 74 |
| Midwest | \$2.49 | 2 | \$2.65 | 110 |
| Gulf Coast | \$2.91 | 3 | \$2.64 | 27 |
| Rocky Mountain | \$3.68 | 3 | \$2.72 | 40 |
| West Coast | \$3.81 | 23 | \$3.03 | 132 |
| NATIONAL AVERAGE | \$3.77 | 53 | \$2.88 | 505 |



COMPARISON OF PRICES OF THIS REPORT VERSUS LAST REPORT

Table 11, below, summarizes the average prices submitted for this report by region, and compares them to prices submitted for the Price Report from January, 2015. 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

| | | Price for April 2015 Period | Price for January 2015 Period | Price Differential April vs. January |
|--|--------------------------------------|-----------------------------|-------------------------------|---|
| <i>Gasoline (\$ per gallon)</i> | <i>National Average</i> | \$2.42 | \$2.30 | \$0.12 / 5% |
| | New England | \$2.50 | \$2.64 | (\$0.14) / (5%) |
| | Central Atlantic | \$2.39 | \$2.38 | \$0.01 / 0% |
| | Lower Atlantic | \$2.35 | \$2.34 | \$0.01 / 0% |
| | Midwest | \$2.24 | \$1.98 | \$0.26 / 13% |
| | Gulf Coast | \$2.20 | \$1.90 | \$0.30 / 16% |
| | Rocky Mountain | \$2.27 | \$2.50 | (\$0.23) / (9%) |
| | West Coast | \$2.91 | \$2.58 | \$0.33 / 13% |
| | <i>Diesel (\$ per gallon)</i> | <i>National Average</i> | \$2.88 | \$3.06 |
| New England | | \$3.29 | \$3.34 | (\$0.05) / (1%) |
| Central Atlantic | | \$2.97 | \$3.00 | (\$0.03) / (1%) |
| Lower Atlantic | | \$2.81 | \$3.06 | (\$0.25) / (8%) |
| Midwest | | \$2.65 | \$2.99 | (\$0.34) / (11%) |
| Gulf Coast | | \$2.64 | \$2.91 | (\$0.27) / (9%) |
| Rocky Mountain | | \$2.72 | \$2.96 | (\$0.24) / (8%) |
| West Coast | | \$3.03 | \$3.18 | (\$0.15) / (5%) |
| <i>Compressed Natural Gas (\$ per GGE)</i> | | <i>National Average</i> | \$2.09 | \$2.11 |
| | New England | \$2.52 | \$2.58 | (\$0.06) / (2%) |
| | Central Atlantic | \$2.08 | \$2.10 | (\$0.02) / (1%) |
| | Lower Atlantic | \$1.86 | \$2.08 | (\$0.22) / (11%) |
| | Midwest | \$2.10 | \$2.11 | (\$0.01) / 0% |
| | Gulf Coast | \$1.99 | \$1.99 | \$0 / 0% |
| | Rocky Mountain | \$1.87 | \$1.87 | \$0 / 0% |
| | West Coast | \$2.33 | \$2.28 | \$0.05 / 2% |
| | <i>Ethanol (E85) (\$ per gallon)</i> | <i>National Average</i> | \$2.13 | \$2.21 |
| New England | | \$2.69 | \$2.82 | (\$0.13) / (5%) |
| Central Atlantic | | \$2.45 | \$2.60 | (\$0.15) / (6%) |
| Lower Atlantic | | \$2.17 | \$2.24 | (\$0.07) / (3%) |
| Midwest | | \$1.92 | \$1.90 | \$0.02 / 1% |
| Gulf Coast | | \$1.91 | \$2.02 | (\$0.11) / (5%) |
| Rocky Mountain | | \$1.96 | \$2.23 | (\$0.27) / (12%) |
| West Coast | | \$2.56 | \$2.54 | \$0.02 / 1% |

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

| | | Price for April 2015 Period | Price for January 2015 Period | Price Differential April vs. January |
|---|--|-----------------------------|-------------------------------|---|
| <i>Propane (\$ per gallon)</i> | <i>National Average</i> | \$2.93 | \$2.92 | \$0.01 / 0% |
| | New England | \$3.12 | \$3.06 | \$0.06 / 2% |
| | Central Atlantic | \$2.85 | \$2.94 | (\$0.09) / (3%) |
| | Lower Atlantic | \$2.97 | \$2.90 | \$0.07 / 2% |
| | Midwest | \$2.64 | \$2.78 | (\$0.14) / (5%) |
| | Gulf Coast | \$2.86 | \$2.84 | \$0.02 / 1% |
| | Rocky Mountain | \$3.11 | \$2.88 | \$0.23 / 8% |
| | West Coast | \$2.99 | \$3.06 | (\$0.07) / (2%) |
| | <i>Biodiesel (B20) (\$ per gallon)</i> | <i>National Average</i> | \$2.92 | \$3.18 |
| New England | | \$3.14 | \$3.64 | (\$0.50) / (14%) |
| Central Atlantic | | \$2.81 | \$3.09 | (\$0.28) / (9%) |
| Lower Atlantic | | \$2.94 | \$3.16 | (\$0.22) / (7%) |
| Midwest | | \$2.79 | \$3.04 | (\$0.25) / (9%) |
| Gulf Coast | | \$2.82 | \$3.06 | (\$0.24) / (8%) |
| Rocky Mountain | | \$2.96 | \$3.33 | (\$0.37) / (11%) |
| West Coast | | \$3.02 | \$3.23 | (\$0.21) / (7%) |
| <i>Biodiesel (B99/B100) (\$ per gallon)</i> | | <i>National Average</i> | \$3.77 | \$4.02 |
| | New England | \$3.17 | \$3.45 | (\$0.28) / (8%) |
| | Central Atlantic | \$5.92 | \$5.57 | \$0.35 / 6% |
| | Lower Atlantic | \$3.79 | \$3.92 | (\$0.13) / (3%) |
| | Midwest | \$2.49 | \$2.60 | (\$0.11) / (4%) |
| | Gulf Coast | \$2.91 | \$3.34 | (\$0.43) / (13%) |
| | Rocky Mountain | \$3.68 | \$3.60 | \$0.08 / 2% |
| | West Coast | \$3.81 | \$4.09 | (\$0.28) / (7%) |

COMPARISON OF PRICES BY REGION FOR PUBLIC AND PRIVATE REFUELING STATIONS

Table 12, below, summarizes the comparison of fuel prices included in this report, separated into averages for privately-owned stations or stations available only to selected fleets (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> | \$2.52 | \$2.41 |
| | New England | \$2.39 | \$2.50 |
| | Central Atlantic | \$2.43 | \$2.38 |
| | Lower Atlantic | \$2.32 | \$2.35 |
| | Midwest | \$2.44 | \$2.23 |
| | Gulf Coast | \$--.-- | \$2.20 |
| | Rocky Mountain | \$2.20 | \$2.27 |
| | West Coast | \$2.75 | \$2.93 |
| <i>Diesel (\$/gallon)</i> | <i>National Average</i> | \$2.87 | \$2.88 |
| | New England | \$3.34 | \$3.29 |
| | Central Atlantic | \$2.81 | \$3.04 |
| | Lower Atlantic | \$2.74 | \$2.82 |
| | Midwest | \$2.46 | \$2.65 |
| | Gulf Coast | \$--.-- | \$2.64 |
| | Rocky Mountain | \$2.25 | \$2.73 |
| | West Coast | \$3.01 | \$3.03 |
| <i>Natural Gas (CNG) (\$/GGE)</i> | <i>National Average</i> | \$1.85 | \$2.17 |
| | New England | \$2.28 | \$2.56 |
| | Central Atlantic | \$1.84 | \$2.24 |
| | Lower Atlantic | \$0.98 | \$1.93 |
| | Midwest | \$2.14 | \$2.09 |
| | Gulf Coast | \$1.59 | \$2.03 |
| | Rocky Mountain | \$1.71 | \$1.97 |
| | West Coast | \$2.01 | \$2.39 |
| <i>Ethanol (E85) (\$/gallon)</i> | <i>National Average</i> | \$2.41 | \$2.11 |
| | New England | \$--.-- | \$2.69 |
| | Central Atlantic | \$2.60 | \$2.43 |
| | Lower Atlantic | \$2.16 | \$2.17 |
| | Midwest | \$2.23 | \$1.89 |
| | Gulf Coast | \$2.69 | \$1.89 |
| | Rocky Mountain | \$1.80 | \$1.96 |
| | West Coast | \$2.52 | \$2.56 |
| <i>Propane (\$/gallon)</i> | <i>National Average</i> | \$1.96 | \$3.02 |
| | New England | \$2.62 | \$3.19 |
| | Central Atlantic | \$1.77 | \$3.23 |
| | Lower Atlantic | \$2.45 | \$2.98 |
| | Midwest | \$1.63 | \$2.71 |
| | Gulf Coast | \$1.39 | \$3.05 |
| | Rocky Mountain | \$1.96 | \$3.14 |
| | West Coast | \$2.57 | \$3.03 |

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>Biodiesel (B20) (\$/gallon)</i> | <i>National Average</i> | \$2.80 | \$2.96 |
| | New England | \$3.04 | \$3.21 |
| | Central Atlantic | \$2.73 | \$3.07 |
| | Lower Atlantic | \$2.46 | \$3.00 |
| | Midwest | \$2.67 | \$2.80 |
| | Gulf Coast | \$3.57 | \$2.74 |
| | Rocky Mountain | \$--.-- | \$2.96 |
| | West Coast | \$2.94 | \$3.05 |
| <i>Biodiesel (B99/B100) (\$/gallon)</i> | <i>National Average</i> | \$3.85 | \$3.76 |
| | New England | \$--.-- | \$3.17 |
| | Central Atlantic | \$--.-- | \$5.92 |
| | Lower Atlantic | \$--.-- | \$3.79 |
| | Midwest | \$2.44 | \$2.53 |
| | Gulf Coast | \$3.89 | \$2.42 |
| | Rocky Mountain | \$--.-- | \$3.68 |
| | West Coast | \$4.31 | \$3.73 |

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 submitted 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.

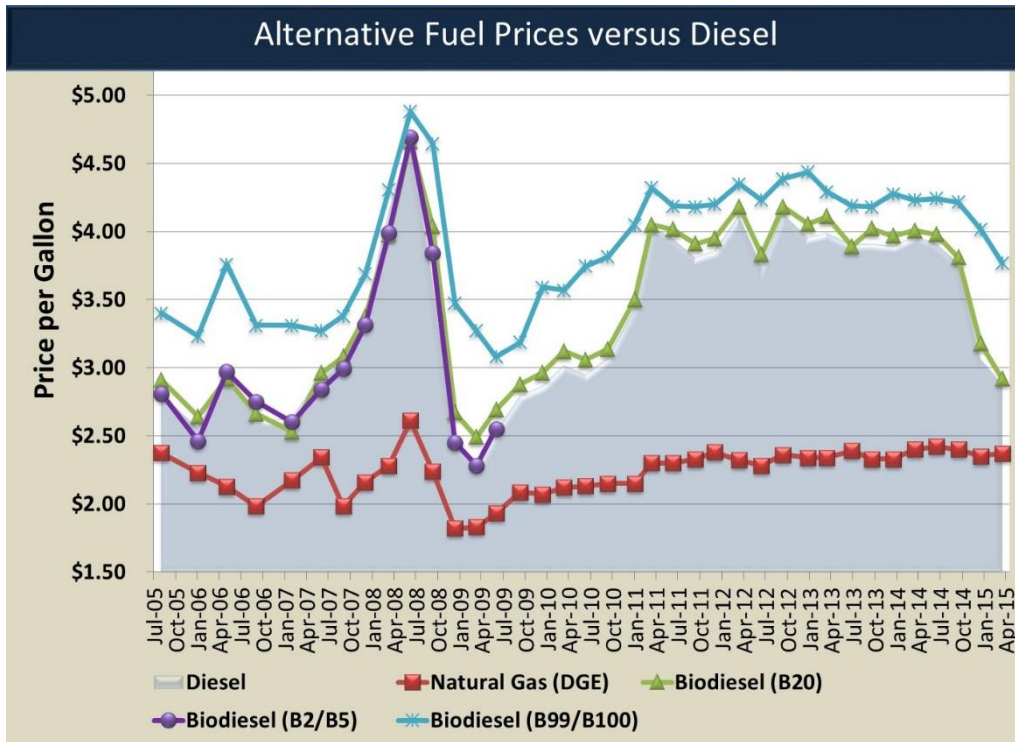
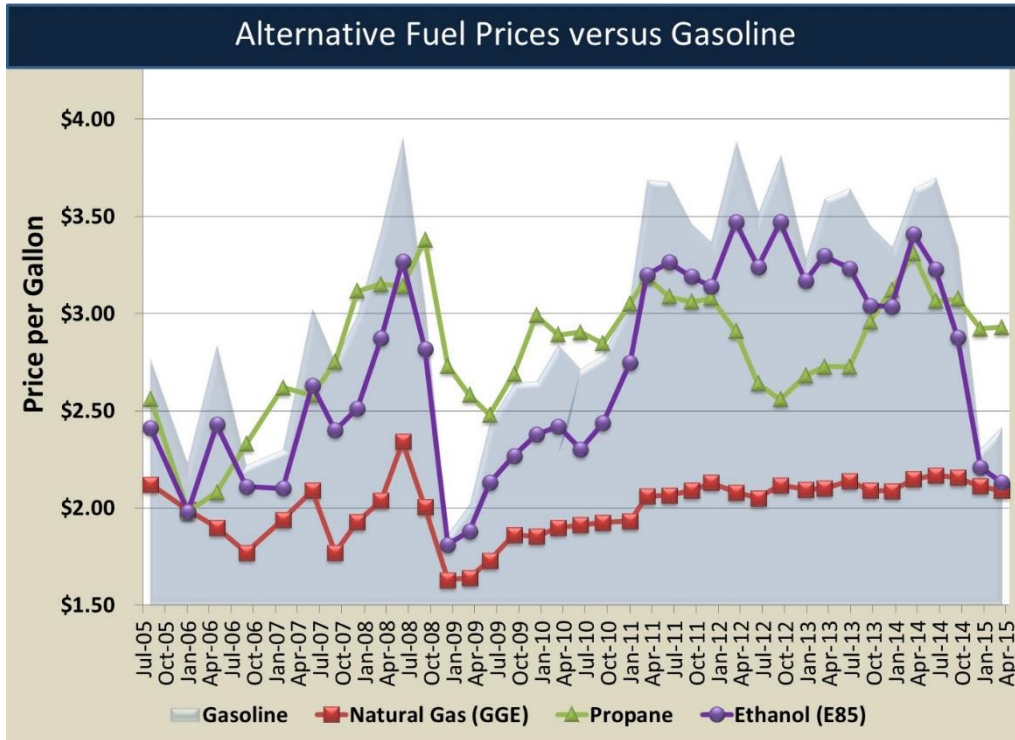


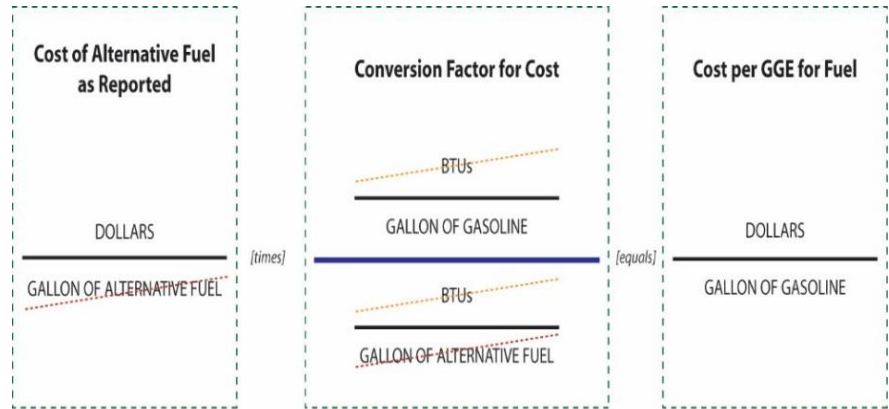
ILLUSTRATION OF CONVERSION FACTORS FOR FUELS

The standard lower heating values for fuels from the Transportation Energy Data Book Edition 33 are listed below.

| | Lower Heating Value |
|------------------------|-------------------------------|
| Gasoline (E0) | 115,400 BTU/gal |
| Gasoline (E10) | 114,300 BTU/gal ¹⁰ |
| Diesel | 128,700 BTU/gal |
| Compressed Natural Gas | 114,300 BTU/GGE ¹¹ |
| 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 (GGE) are listed 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).



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

Conversion to GGE

To convert the price of an alternative fuel from dollars per gallon to dollars per GGE, multiply the price per gallon of the alternative fuel by the conversion factor below.

| | Conversion factor to GGE |
|------------------|--------------------------|
| CNG | 1.00 |
| Ethanol (E85) | 1.30 |
| Propane | 1.37 |
| Biodiesel (B20) | 0.90 |
| Biodiesel (B100) | 0.98 |

Conversion to DGE

Conversion factors to establish prices in dollars per diesel gallon equivalent (DGE) are listed below, and were developed using the lower heating values outlined above. To convert the price of an alternative fuel from dollars per gallon to dollars per DGE, multiply the price per gallon of the alternative fuel by the conversion factor below.

| | Conversion factor to DGE |
|------------------|--------------------------|
| CNG (in GGE) | 1.13 |
| Ethanol (E85) | 1.47 |
| Propane | 1.54 |
| Biodiesel (B20) | 1.02 |
| Biodiesel (B100) | 1.10 |

¹⁰ According to the National Renewable Energy Laboratory (NREL) Alternative Fuels Data Center, the energy content of common gasoline baseline references (E0, E10 and indolene) varies between 112,114 and 116,090 Btu/gal. We chose 114,300 Btu/gal. for the E10 energy content, consistent with the Transportation Energy Data Book (TEDB) energy content of CNG, in GGEs. See footnote 11.

¹¹ (5.66 lbs. of CNG/GGE) x (20,200 BTU/lb.) = 114,332; rounded to 114,300.

ACKNOWLEDGEMENTS

The authors would like to acknowledge all of the contributors from the Clean Cities community who have provided prices for this report; we sincerely appreciate your continued dedication to the success of this report. The authors would also like to acknowledge the continued support of DOE for developing this report.

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, or if you have any questions, please contact:

U.S. DOE, Clean Cities
EE-3V
1000 Independence Avenue, SW
Washington, D.C. 20585
Phone: (202) 586-6459
afpr@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.