



Iowa Department of **REVENUE**

2017 Retailers Fuel Gallons Annual Report

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Introduction

In 2006, the Iowa General Assembly enacted H.F. 2754, an act pertaining to the regulation of renewable fuels and energy and providing incentives for the installation of biofuels infrastructure and the promotion of biofuels sales. This legislation established a goal that biofuels replace 25 percent of all petroleum used in the formulation of gasoline by 2020.

To measure the State's progress toward achieving this goal, new reporting requirements for fuel retailers, administered by the Department of Revenue, were established in 2007 (Iowa Code section 452A.33). In consultation with the Renewable Fuels Infrastructure Board, motor fuel retailers, and other interested parties, the Department established an annual reporting requirement by administrative rule (701 IAC 67.27). Fuel retailers filed the first annual report for sales made during calendar year 2007.

The Retailers Fuel Gallons Annual Report is due to the Department by January 31st in the following year. Despite a requirement for retailers to complete the report, the participation rate for retail locations across the state has typically been under 90 percent.

In 2015, in response to the changing patterns of biofuel sales and recent law changes, the data collected on the Retailers Fuel Gallons Annual Report was updated. The current report specifically tracks B11 or higher biodiesel blends, which were subject to a lower fuel excise tax rate beginning July 1, 2015. The ethanol blend tracking was also changed to better account for the growing E15 market. Ethanol blended gasoline comprised of 15 percent ethanol is now reported as one of two types: Registered E15 or Flex Fuel E15. Registered E15 is sold by retailers that have registered with the U.S. Environmental Protection Agency to sell E15 to consumers with cars built in 2001 or later. However, during June 1st through September 15th of each year, retailers can only continue to sell Registered E15 if they obtain low volatile gasoline for blending, which is not piped into Iowa. Without taking these steps, registered retailers can only sell E15 fuel as a Flex Fuel. Flex Fuel E15 (15% to 19% ethanol) also includes gallons sold by retailers through a blender pump at any time during the year.

Along with the report redesign, the Department made report submission available online via a webform that allows retailers to electronically report their sales by station. For any retailer using the webform, the need for data entry by the Department is eliminated, which increases the accuracy and efficiency of reporting.

The 2017 reports revealed the largest increase in state-wide biofuel usage since the data was first tracked in 2007 largely reflecting higher sales of E15, E85, and B20. The increase in the 2017 biofuel distribution percentage increased 1.3 percentage points to 13.4 percent from 12.1 percent in 2016. Higher gallons of pure ethanol accounted for 30 percent of the growth with gains in pure biodiesel gallons accounting for the other 70 percent.

Reporting Requirements

Fuel retailers were directed to complete the Department's webform to report 2017 annual fuel sales. Retailers indicating a lack of technology could report annual sales by completing and returning the paper form. Retailers with a large number of locations could securely email an electronic file with annual fuel sales by location. The Retailers Fuel Gallons Annual Report requires retailers to provide information on retail gasoline gallons sold for the following fuel types:

- Gasoline (non-ethanol blend)
- Ethanol E10 blend (10% to 14% ethanol)
- Ethanol Registered E15 blend (15% ethanol)
- Ethanol Flex Fuel E15 blend (15% to 19% ethanol)
- Ethanol E20 blend (20% to 69% ethanol)
- Ethanol E85 blend (70% to 85% ethanol)

Gallons of clear and dyed diesel sales are also required. The distinction between clear diesel and dyed diesel reflects whether the fuel is subject to State and federal fuel excise taxes. Dyed diesel fuel is not subject to fuel excise taxes and is sold for use in farm, construction, and other types of equipment that do not travel under their own power on public roads, except for short distances such as between farm fields.

For biodiesel sales, additional detailed information is required:

- Clear Biodiesel (1% to 4% biodiesel) B1-B4
- Clear Biodiesel (5% to 10% biodiesel) B5-B10
- Clear Biodiesel (11% to 19% biodiesel) B11-B19
- Clear Biodiesel (20% to 49% biodiesel) B20-B49
- Clear Biodiesel (50% to 100% biodiesel) B50-B100
- Dyed Biodiesel (1% to 4% biodiesel) D1-D4
- Dyed Biodiesel (5% to 10% biodiesel) D5-D10
- Dyed Biodiesel (11% to 19% biodiesel) D11-D19
- Dyed Biodiesel (20% to 49% biodiesel) D20-D49
- Dyed Biodiesel (50% to 100% biodiesel) D50-D100

Statistical Summary for 2017

The Department identified 2,367 potential retail locations at which fuel may have been sold at retail during 2017. Emails with a link to the webform were sent to 453 retailers who provided email addresses on their calendar year 2016 annual reports. Postcards with directions for completing the online report were mailed to another 725 retailers, identified using Department of Agriculture and Land Stewardship motor fuel license information and the Department of Revenue eligible purchaser's database. Electronic files were emailed to 19 large fuel retailers with 1,039 locations, providing an option other than station-by-station webform reporting. Paper reports were mailed to 150 locations where operators indicated a lack of online access.

The Department received webform reports, paper forms, or electronic files representing 2,079 retail locations, a response rate of 87.8 percent compared to 91.8 percent in 2016. Additional replies from 72 locations indicated that no retail sales of any type of fuel were made during 2017. The 2,079 locations reported 2.40 billion gallons of retail fuel sales (see Table 2).

Of the reporting 2,079 Iowa retail locations, 1,999 (96.2%) reported selling at least one type of ethanol blend and 539 (25.9%) reported selling one or more blend of clear or dyed biodiesel. Of the locations selling ethanol, 1,985 (95.4%) reported selling E10 fuel, 219 (10.5%) reported selling E15 Registered, E15 Flex Fuel, and/or E20 and 299 (14.4%) reported selling E85. Biofuel sales are summarized below and in Table 1.

Gasoline Fuel Sales

During 2017, the reported amount of E10 gasoline sold equaled 1,314.9 million gallons. E85 gasoline sold equaled 20.6 million gallons, E20 gasoline sold equaled 1.2 million gallons, and E15 gasoline sold equaled 27.6 million gallons, with 94.1 percent sold through registered pumps. Combined, the five ethanol blends represented 87.2 percent of total reported gasoline fuel sales during the year. Of the 2,053 locations that sold gasoline, 1,999 (97.4%) sold one or more ethanol blend.

With just over 12 percent of locations failing to complete their Retailers Fuel Gallons Annual Report for 2017, gallons from the Department's Monthly Fuel Tax Reports were used to estimate the amount of gasoline sales underreported. The gallons presented in the Monthly Fuel Tax Reports reflect taxable fuel shipped from terminals rather than gallons sold at retail locations. Because the Monthly Fuel Tax Reports reflect fuel shipments made during the prior month, taxable gallons reported in the monthly reports covering February 2017 through January 2018 were compared with gallons reported as sold by retailers completing the 2017 annual report. During this period, fuel taxes were paid on a total of 1,768.8 million gallons of gasoline fuels. Comparatively, the 87.2 percent of retail locations that filed annual reports indicated 1,563.7 million gallons of gasoline fuels were sold, including all ethanol blends and non-ethanol gasoline. This reported amount equates to 88.4 percent of taxable gallons in 2017.

Diesel Fuel Sales

Based on annual reports submitted to the Department, 1,418 retail locations sold clear diesel fuel, with 508 of these locations selling clear biodiesel fuel during 2017. Additionally, 339 retail locations sold dyed diesel fuel, with 127 of these locations selling dyed biodiesel fuel during 2017.

The amount of clear biodiesel sold in 2017 equaled 383.8 million gallons, or 61.3 percent of total clear diesel fuel sales. Retailers reported selling 626.5 million of gallons of clear diesel fuel. In comparison, the number of taxable (clear) gallons of diesel fuel shipped during 2017, as reported on the Monthly Fuel Tax Reports, equaled 721.6 million. Therefore, retailers completing annual reports for 2017 accounted for 86.8 percent of diesel fuel on which fuel taxes were paid.

Annual reports for 2017 indicated 211.2 million gallons of dyed (non-taxed) diesel fuel were sold, including 51.3 million biodiesel gallons (24.3%). Dyed diesel gallons are not captured in the Monthly Fuel Tax Reports.

Total diesel gallons reported were 837.8 million, and total biodiesel gallons were 435.0 million; therefore, biodiesel blended gallons accounted for 51.9 percent of diesel gallons sold by reporting retailers.

Table 1: Iowa Gasoline, Diesel, and Biofuel Sales for Calendar Year 2017

| Fuel Type | Locations | Gallons Sold | Pure Petroleum/Diesel | Pure Biofuel |
|--|--------------|----------------------|-----------------------|--------------------|
| Gasoline (Non-Ethanol) | 1,671 | 199,380,478 | 199,380,478 | 0 |
| Ethanol | | | | |
| E10 | 1,985 | 1,314,866,572 | 1,183,379,915 | 131,486,657 |
| E15 Registered | 180 | 26,082,334 | 22,169,984 | 3,912,350 |
| E15 Flex Fuel | 46 | 1,626,138 | 1,382,217 | 243,921 |
| E20 | 84 | 1,175,587 | 940,470 | 235,117 |
| E85 | 299 | 20,570,648 | 4,319,836 | 16,250,812 |
| Total Ethanol | 1,999 | 1,364,321,279 | 1,212,192,422 | 152,128,857 |
| Total Gasoline and Ethanol | 2,053 | 1,563,701,757 | 1,411,572,900 | 152,128,857 |
| Ethanol Share | 97.4% | 87.2% | | 9.7% |
| Clear Diesel (Non-Biodiesel) | 1,263 | 242,745,421 | 242,745,421 | 0 |
| Clear Biodiesel | | | | |
| Clear B1-B4 | 83 | 7,102,486 | 6,819,096 | 283,389 |
| Clear B5-B10 | 316 | 66,101,929 | 61,078,183 | 5,023,747 |
| Clear B11-B19 | 261 | 220,544,985 | 189,227,597 | 31,317,388 |
| Clear B20-B49 | 196 | 89,804,785 | 71,843,828 | 17,960,957 |
| Clear B50-B100 | 10 | 225,577 | 112,789 | 112,789 |
| Subtotal Clear Biodiesel | 508 | 383,779,762 | 329,081,493 | 54,698,269 |
| Total Clear Diesel | 1,418 | 626,525,183 | 571,826,914 | 54,698,269 |
| Clear Biodiesel Share | 35.8% | 61.3% | | 8.7% |
| Dyed Diesel (Non-Biodiesel) | 313 | 159,975,407 | 159,975,407 | 0 |
| Dyed Biodiesel | | | | |
| Dyed D1-D4 | 36 | 3,458,357 | 3,320,368 | 137,988 |
| Dyed D5-D10 | 94 | 46,494,730 | 44,169,993 | 2,324,736 |
| Dyed D11-D19 | 23 | 515,827 | 442,580 | 73,247 |
| Dyed D20-D49 | 15 | 476,189 | 380,951 | 95,238 |
| Dyed D50-D100 | 13 | 316,957 | 158,479 | 158,479 |
| Subtotal Dyed Biodiesel | 127 | 51,262,060 | 48,472,371 | 2,789,689 |
| Total Dyed Diesel | 339 | 211,237,467 | 208,447,778 | 2,789,689 |
| Dyed Biodiesel Share | 62.9% | 24.3% | | 1.3% |
| Total Biodiesel | 539 | 435,041,822 | 377,553,864 | 57,487,958 |
| Total Diesel and Biodiesel | 1,434 | 837,762,650 | 780,274,692 | 57,487,958 |
| Biodiesel Share | 37.6% | 51.9% | | 6.9% |
| Total Fuel | 2,079 | 2,401,464,406 | 2,191,847,591 | 209,616,815 |
| Pure Biofuel Share of Total Gasoline and Diesel Sales | | | | 8.7% |
| Biofuel Distribution Percentage | | | | 13.4% |

Source: 2017 Retailers Fuel Gallons Annual Reports

Biofuel Distribution Percentage

The primary purpose of this report is to provide the information needed to determine the State's progress toward replacing 25 percent of petroleum-based motor fuels with biofuels by the year 2020. Table 1 provides estimates of the breakdown between petroleum or diesel and pure biofuel for each fuel type.

Based on blend details provided by a small number of biofuel retailers in 2015, the following blend assumptions were used to measure the progress of meeting the goal of biofuel replacing 25 percent of gasoline by 2020:

- E10 blend gasoline fuel gallons were multiplied by 0.10
- E15 Registered blend gasoline fuel gallons were multiplied by 0.15
- E15 Flex blend gasoline fuel gallons were multiplied by 0.15
- E20 blend gasoline fuel gallons were multiplied by 0.20
- E85 blend gasoline fuel gallons were multiplied by 0.79
- B1-B4 blend diesel fuel gallons were multiplied by 0.0399
- B5-B10 blend diesel fuel gallons were multiplied by 0.076
- B11-B19 blend diesel fuel gallons were multiplied by 0.142
- B20-B49 blend diesel fuel gallons were multiplied by 0.20
- B50-B100 blend gallons were multiplied by 0.50
- D1-D4 blend diesel fuel gallons were multiplied by 0.0399
- D5-D10 blend diesel fuel gallons were multiplied by 0.05
- D11-D19 blend diesel fuel gallons were multiplied by 0.142
- D20-D49 blend diesel fuel gallons were multiplied by 0.20
- D50-D100 blend gallons were multiplied by 0.50

These calculations indicate that in 2017, pure ethanol comprised 9.7 percent of the volume of total gasoline and ethanol fuel sales. The aggregate ethanol gallonage, which is the number of pure ethanol gallons sold by retailers in 2017, was 152.1 million gallons. Pure biodiesel comprised 6.9 percent of total diesel and biodiesel sales. The aggregate biodiesel gallonage, which is the number of pure biodiesel gallons sold by retailers in 2017, was 57.5 million gallons. Together, pure ethanol and pure biodiesel comprised 8.7 percent of all fuel sales reported by retail locations. However, the formula specified in Iowa Code section 452.31(8) for the biofuel distribution percentage used to determine progress toward meeting the 25 percent biofuels goal does not include diesel fuel in its denominator. The formula is as follows:

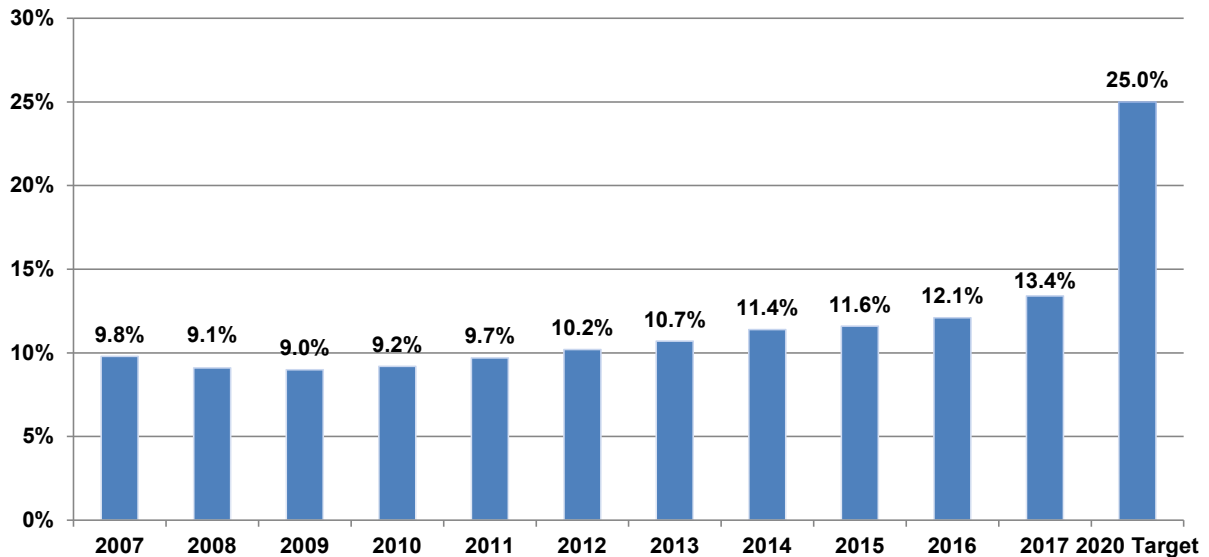
$$\text{Biofuel Distribution Percentage} = \frac{\text{Pure Ethanol Gallons} + \text{Pure Biodiesel Gallons}}{\text{Total Gasoline Gallons}}$$

Using this formula, biofuels accounted for 13.4 percent of Iowa retail motor fuel sales in 2017. This is an increase from the 12.1 percent calculated for 2016 (see Appendix).

Figure 1 presents the biofuel distribution percentage calculated for the 2007 through the 2017 calendar years. Between 2010 and 2013, the State percentage increased 0.5

percentage points each year, solely as a result of higher biodiesel usage. The 0.7 percentage point jump in 2014 reflected a change in the octane level of gasoline piped into Iowa, which occurred in late 2013; this resulted in higher ethanol sales throughout the following calendar year. The 0.5 percentage point gain in 2016 reflected both higher ethanol and biodiesel sales.

Figure 1: Statewide Biofuel Distribution Percentage, 2007-2017



Source: Retailers Fuel Gallons Annual Reports, 2007-2017

As stated previously, the record growth in the biofuel distribution percentage in 2017 was due 30 percent to an increase in pure ethanol gallons and 70 percent to an increase in pure biodiesel gallons. Table 2 illustrates that reported total ethanol gallons actually declined between 2016 and 2017 by 7.2 million gallons while pure ethanol gallons rose 5.1 million gallons. The pure ethanol gains were driven by growth in Registered E15 by 21.1 million gallons, pushing up pure ethanol gallons by 3.2 million gallons (426.7%) over 2016, and growth in E85 sales by 7.1 million gallons, pushing up pure ethanol gallons by 5.6 million (52.7%). The gains in biodiesel were dominated by growth in clear biodiesel sales with blends between B20-B49. Those reported gallons increased 52.7 million gallons, pushing up pure biodiesel gallons by 10.5 million gallons (142.3%).

Table 2: Change in Biofuel and Pure Biofuel Sales Between 2016 and 2017

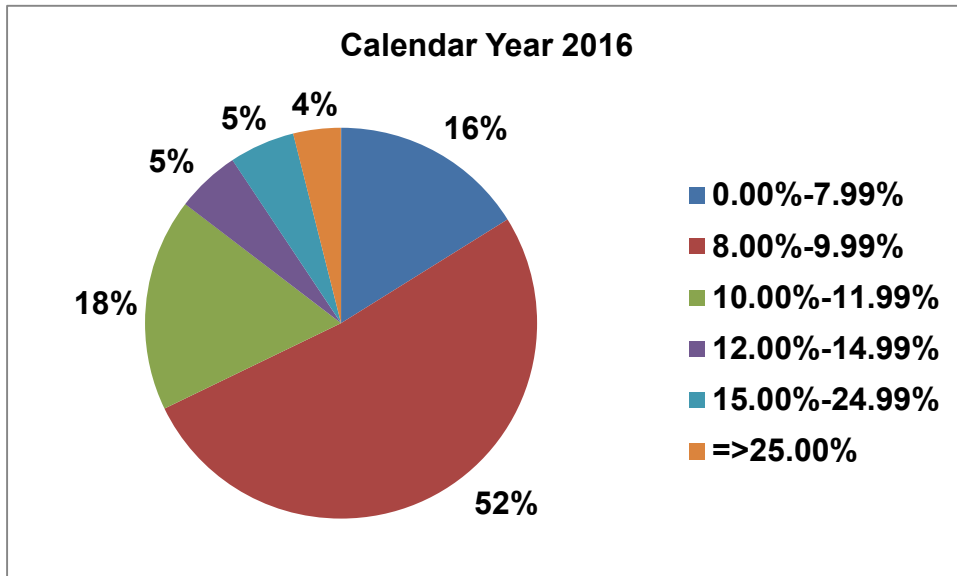
| Fuel Type | Change in Biofuel Gallons Sold | Percent Change in Biofuel Gallons | Change in Pure Biofuel Gallons Sold | Percent Change in Pure Biofuel Gallons |
|------------------------------|---------------------------------------|--|--|---|
| Ethanol | | | | |
| E10 | -34,583,794 | -2.6% | -3,493,110 | -2.6% |
| E15 Registered | 21,130,422 | 426.7% | 3,169,563 | 426.7% |
| E15 Flex Fuel | 1,043,935 | 179.3% | 156,591 | 179.3% |
| E20 | -1,856,321 | -61.2% | -371,263 | -61.2% |
| E85 | 7,098,787 | 52.7% | 5,608,042 | 52.7% |
| Total Ethanol | -7,166,971 | -0.5% | 5,069,823 | 3.4% |
| Clear Biodiesel | | | | |
| Clear B1-B4 | -2,388,576 | -25.2% | 148,444 | 110.0% |
| Clear B5-B10 | -29,128,211 | -30.6% | -2,213,744 | -30.6% |
| Clear B11-B19 | 17,465,629 | 8.6% | 2,480,119 | 8.6% |
| Clear B20-B49 | 52,740,109 | 142.3% | 10,548,022 | 142.3% |
| Clear B50-B100 | 197,362 | 699.5% | 98,681 | 699.5% |
| Total Clear Biodiesel | 38,886,313 | 11.3% | 11,061,522 | 25.3% |
| Dyed Biodiesel | | | | |
| Dyed D1-D4 | 1,309,790 | 61.0% | 52,260 | 61.0% |
| Dyed D5-D10 | 15,024,336 | 47.7% | 751,217 | 47.7% |
| Dyed D11-D19 | 47,493 | 10.1% | 6,744 | 10.1% |
| Dyed D20-D49 | -318,829 | -40.1% | -63,766 | -40.1% |
| Dyed D50-D100 | 243,551 | 331.8% | 121,776 | 331.8% |
| Total Dyed Biodiesel | 16,306,341 | 46.6% | 868,231 | 45.2% |
| Total Biofuel | 48,025,683 | 2.7% | 16,999,576 | 8.8% |

Source: 2017 and 2016 Retailers Fuel Gallons Annual Reports

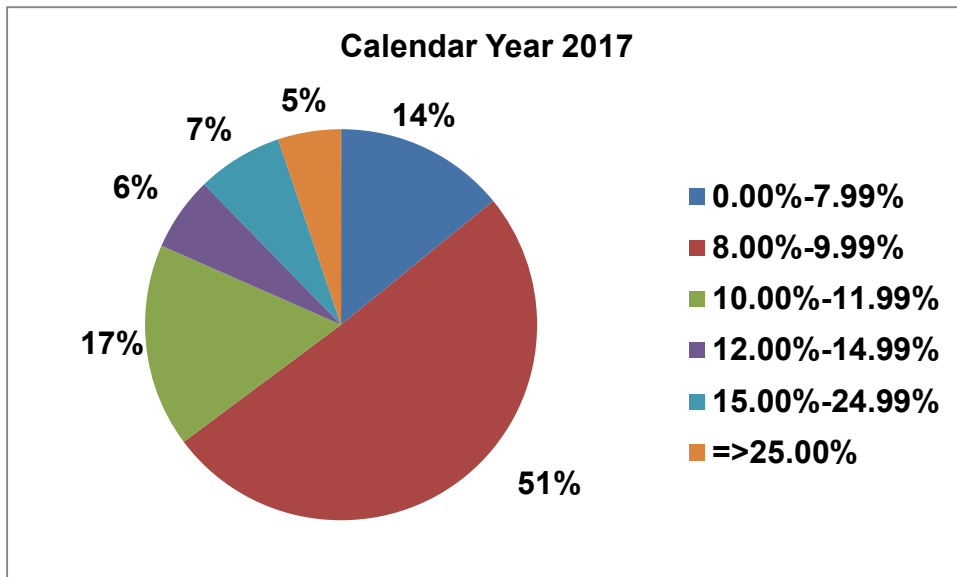
Although the 25 percent goal is for the state as a whole, it is instructive to consider that same measure at the retailer and county level. Figure 2 illustrates the breakdown of retail locations by biofuel distribution percentage, calculated using the sales reported by each retail location for which annual reports were filed in 2016 or 2017. The data includes only the retail locations that reported gasoline or ethanol sales in the respective calendar year, excluding those with only diesel sales reported. However, as noted above, the calculation of the biofuel distribution percentage includes any pure biodiesel reported at those locations.

The share of stations reporting a biofuel distribution percentage equal to or greater than 25 percent grew from 4 percent in 2016 to 5 percent in 2017. The percent of retailers reporting from 0 percent to 7.99 percent declined from 16 percent in 2016 to 14 percent in 2017. The share of retailers in the 8 to 9.99 percent and the share from 10 to 11.99 percent both decreased by one percentage point from 52 percent to 51 percent and from 18 percent to 17 percent respectively. Both the share of retailers with a biofuel distribution of 12 to 14.99 percent and the share with 15 to 24.99 percent increased from 5 to 6 percent and from 5 to 7 percent respectively.

Figure 2: Breakdown of Retail Locations by Reported Biofuel Distribution Percentage



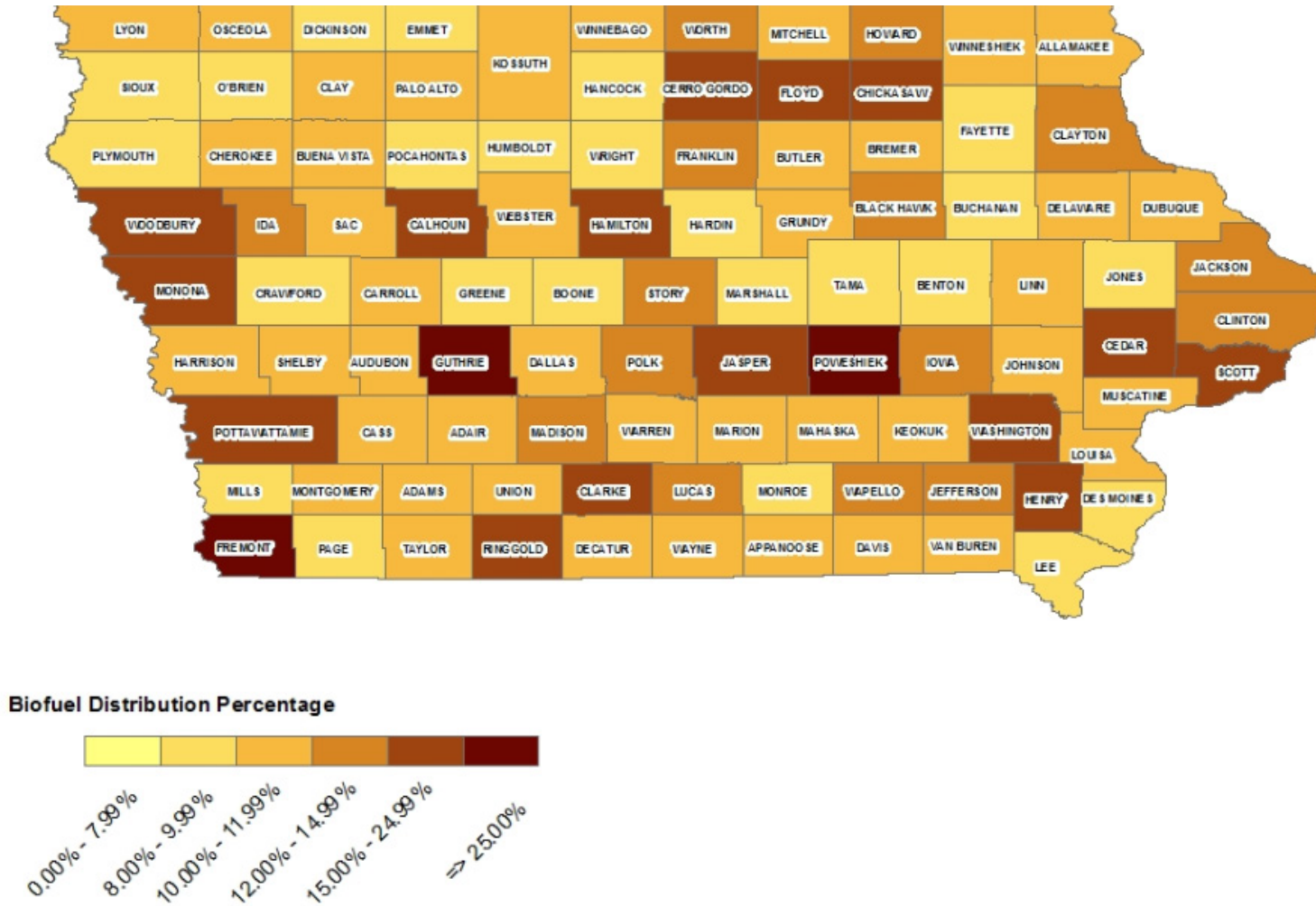
Source: 2016 Retailers Fuel Gallons Annual Reports



Source: 2017 Retailers Fuel Gallons Annual Reports

To further illustrate the variation in sales of biofuel among Iowa retailers, Figure 3 maps the biofuel distribution percentage calculated by county. These percentages are based on the total sales reported by retailers within each county who remitted the 2016 annual gallons report. Three counties (Fremont, Guthrie, and Poweshiek) exceeded the 25 percent goal; nine counties had pure biofuel sales comprising between 15.0 percent and 24.99 percent of total gasoline sales. Ten counties fell into the 12.0 percent to 14.99 percent category. Eight counties fell into the 0.0 to 8.99 percent category; thirty-five counties fell in the 9.0 percent to 9.99 percent category, and thirty-four fell into the 10.0 percent to 11.99 percent category. Table 3 provides the total gallons of non-ethanol gasoline, ethanol, clear and dyed non-biodiesel diesel, and clear and dyed biodiesel gallons for all counties with more than five retailers reporting sales to the Department.

Figure 3. Biofuel Distribution Percentage by County for 2017



Source: 2017 Retailers Fuel Gallons Annual Reports

Table 3. Calendar Year 2017 Total Gallons by County

| County | Number of Retailers | Gasoline Sales | Ethanol Sales | Clear and Dyed Diesel Sales | Clear and Dyed Biodiesel | Biofuel Distribution |
|-------------|---------------------|----------------|---------------|-----------------------------|--------------------------|----------------------|
| Adair | 11 | 1,597,261 | 7,560,455 | 3,891,118 | 884,478 | 11.27% |
| Allamakee | 16 | 1,224,477 | 5,730,526 | 1,252,530 | 1,290,584 | 10.50% |
| Appanoose | 9 | 416,275 | 4,152,249 | 1,768,101 | 516,483 | 10.13% |
| Audubon | 6 | 190,108 | 2,321,556 | 1,691,741 | 743,772 | 11.89% |
| Benton | 15 | 1,072,150 | 5,645,246 | 5,688,164 | 200,882 | 8.70% |
| Black Hawk | 70 | 9,128,157 | 49,211,111 | 3,892,882 | 16,084,143 | 12.92% |
| Boone | 14 | 1,197,445 | 9,011,630 | 2,097,117 | 269,320 | 9.16% |
| Bremer | 15 | 2,133,737 | 10,317,685 | 1,650,648 | 1,794,874 | 11.39% |
| Buchanan | 15 | 1,763,217 | 8,317,572 | 13,785,643 | 495,907 | 9.00% |
| Buena Vista | 19 | 1,001,238 | 8,268,387 | 3,036,756 | 397,274 | 10.26% |
| Butler | 12 | 814,251 | 5,320,937 | 1,215,644 | 1,370,211 | 10.77% |
| Calhoun | 14 | 348,096 | 4,585,895 | 932,601 | 3,269,997 | 17.68% |
| Carroll | 24 | 1,633,263 | 8,648,839 | 11,561,431 | 669,123 | 10.49% |
| Cass | 16 | 868,673 | 7,629,513 | 4,326,076 | 1,218,245 | 10.61% |
| Cedar | 16 | 1,465,594 | 9,155,418 | 4,122,219 | 10,345,423 | 24.79% |
| Cerro Gordo | 26 | 4,277,734 | 28,305,089 | 1,831,527 | 18,750,110 | 18.67% |
| Cherokee | 12 | 643,101 | 4,205,263 | 2,340,271 | 453,179 | 10.63% |
| Chickasaw | 13 | 1,340,719 | 5,987,751 | 4,167,572 | 4,307,513 | 15.30% |
| Clarke | 8 | 1,174,040 | 6,202,129 | 2,586,068 | 7,181,931 | 23.85% |
| Clay | 18 | 698,364 | 4,974,811 | 2,910,519 | 460,112 | 10.49% |
| Clayton | 20 | 1,301,737 | 6,672,155 | 614,854 | 1,396,826 | 12.38% |
| Clinton | 26 | 1,830,593 | 19,611,300 | 5,654,765 | 3,212,277 | 12.55% |
| Crawford | 12 | 852,247 | 5,084,633 | 2,097,682 | 457,913 | 9.73% |
| Dallas | 35 | 5,508,373 | 37,109,989 | 3,169,125 | 2,113,999 | 10.41% |
| Delaware | 9 | 1,030,780 | 5,775,175 | 1,354,327 | 932,536 | 10.68% |
| Des Moines | 19 | 1,334,915 | 13,858,915 | 1,755,575 | 57,563 | 9.85% |
| Dickinson | 21 | 2,023,647 | 7,722,396 | 1,099,543 | 65,830 | 8.34% |
| Dubuque | 48 | 11,311,257 | 74,337,396 | 16,809,583 | 14,422,733 | 10.13% |
| Emmet | 9 | 353,184 | 2,995,003 | 645,043 | 0 | 9.33% |
| Fayette | 21 | 994,336 | 6,372,528 | 2,843,635 | 340,565 | 9.21% |
| Floyd | 14 | 889,448 | 7,783,698 | 3,126,878 | 7,873,656 | 21.57% |
| Franklin | 11 | 395,611 | 3,886,900 | 3,133,706 | 735,175 | 12.10% |
| Fremont | 9 | 621,548 | 7,439,288 | 1,203,249 | 16,884,463 | 41.59% |
| Greene | 10 | 273,418 | 3,826,524 | 1,173,423 | 130,742 | 9.99% |
| Grundy | 14 | 610,351 | 6,586,875 | 5,532,817 | 2,614,707 | 11.66% |
| Guthrie | 12 | 598,452 | 5,266,879 | 889,577 | 7,768,626 | 30.30% |
| Hamilton | 17 | 782,895 | 8,781,872 | 2,678,916 | 9,393,014 | 24.19% |
| Hancock | 11 | 442,187 | 3,185,379 | 4,100,887 | 93,014 | 8.94% |
| Hardin | 25 | 743,541 | 7,734,718 | 6,220,238 | 282,264 | 9.88% |
| Harrison | 18 | 1,134,050 | 8,295,052 | 4,771,353 | 1,159,901 | 11.12% |
| Henry | 14 | 949,402 | 15,244,696 | 1,761,328 | 7,938,221 | 16.64% |
| Howard | 9 | 699,857 | 3,522,422 | 2,240,970 | 1,306,937 | 13.00% |
| Humboldt | 13 | 544,065 | 3,762,814 | 5,193,584 | 239,745 | 9.83% |
| Ida | 12 | 394,967 | 2,672,989 | 2,700,574 | 0 | 12.32% |
| Iowa | 138 | 9,277,052 | 50,093,059 | 43,022,172 | 18,326,107 | 12.04% |
| Jackson | 16 | 1,161,029 | 7,468,485 | 3,136,415 | 1,951,928 | 13.41% |
| Jasper | 26 | 1,927,123 | 16,233,833 | 4,085,014 | 14,576,861 | 21.61% |

Table 3. Calendar Year 2017 Total Gallons by County (continued)

| County | Number of Retailers | Gasoline Sales | Ethanol Sales | Clear and Dyed Diesel Sales | Clear and Dyed Biodiesel | Biofuel Distribution |
|---------------|---------------------|----------------|---------------|-----------------------------|--------------------------|----------------------|
| Jefferson | 16 | 864,325 | 5,450,545 | 1,641,095 | 1,300,292 | 12.36% |
| Johnson | 51 | 6,813,180 | 45,519,191 | 2,025,147 | 2,926,132 | 10.70% |
| Jones | 10 | 997,967 | 6,917,516 | 2,595,609 | 1,049,651 | 9.75% |
| Keokuk | 10 | 459,328 | 4,044,062 | 1,697,542 | 701,076 | 11.98% |
| Kossuth | 15 | 840,651 | 6,562,558 | 10,431,907 | 592,571 | 10.58% |
| Lee | 22 | 1,789,463 | 12,613,639 | 1,537,916 | 1,297,850 | 9.29% |
| Linn | 85 | 13,475,886 | 83,850,111 | 12,996,345 | 9,523,034 | 11.00% |
| Louisa | 9 | 574,365 | 4,528,297 | 1,298,296 | 306,963 | 10.07% |
| Lucas | 7 | 398,337 | 2,519,183 | 221,095 | 2,152,112 | 13.85% |
| Lyon | 10 | 652,088 | 3,877,193 | 2,265,507 | 561,912 | 10.59% |
| Madison | 12 | 889,024 | 8,336,852 | 5,717,687 | 1,598,389 | 12.76% |
| Mahaska | 17 | 833,347 | 10,124,257 | 2,021,572 | 1,374,209 | 10.41% |
| Marion | 25 | 1,762,490 | 13,064,191 | 6,146,605 | 244,648 | 10.43% |
| Marshall | 21 | 2,505,061 | 12,377,867 | 2,356,778 | 1,096,729 | 9.12% |
| Mills | 9 | 622,829 | 5,090,043 | 1,586,642 | 158,446 | 9.33% |
| Mitchell | 10 | 618,300 | 3,429,288 | 834,664 | 150,304 | 10.92% |
| Monona | 11 | 740,799 | 5,384,517 | 1,675,491 | 2,622,342 | 17.72% |
| Montgomery | 8 | 575,742 | 3,425,792 | 925,132 | 758,164 | 11.09% |
| Muscatine | 20 | 1,906,629 | 15,196,433 | 3,864,949 | 393,386 | 10.36% |
| O'Brien | 14 | 681,412 | 5,525,936 | 2,964,955 | 188,785 | 9.76% |
| Osceola | 7 | 243,533 | 2,413,904 | 2,716,799 | 15,396 | 10.35% |
| Other | 16 | 1,154,145 | 8,330,458 | 1,563,025 | 1,256,375 | 10.20% |
| Page | 7 | 552,277 | 4,898,747 | 562,766 | 72,172 | 9.09% |
| Palo Alto | 8 | 350,248 | 3,625,598 | 2,100,640 | 96,047 | 10.37% |
| Plymouth | 18 | 1,996,077 | 8,727,139 | 10,236,326 | 1,309,916 | 9.38% |
| Pocahontas | 8 | 224,814 | 2,228,442 | 437,586 | 0 | 9.40% |
| Polk | 180 | 32,404,264 | 193,991,854 | 30,581,285 | 44,982,291 | 13.16% |
| Pottawattamie | 64 | 8,802,962 | 59,289,688 | 11,530,864 | 60,519,089 | 21.70% |
| Poweshiek | 19 | 1,392,103 | 12,621,773 | 1,847,310 | 21,490,833 | 33.96% |
| Ringgold | 7 | 171,529 | 1,574,618 | 634,889 | 1,679,226 | 17.04% |
| Sac | 14 | 595,252 | 4,824,022 | 1,621,768 | 892,477 | 11.56% |
| Scott | 76 | 5,983,064 | 74,463,682 | 8,251,309 | 46,656,395 | 18.08% |
| Shelby | 12 | 497,451 | 4,434,840 | 3,496,473 | 242,919 | 10.32% |
| Sioux | 28 | 2,440,923 | 9,815,402 | 12,692,808 | 1,316,262 | 9.31% |
| Story | 40 | 4,565,511 | 36,522,960 | 3,554,768 | 2,830,988 | 13.14% |
| Tama | 18 | 855,503 | 7,967,743 | 3,583,213 | 97,098 | 9.90% |
| Taylor | 7 | 257,050 | 1,925,695 | 764,808 | 233,939 | 10.66% |
| Union | 11 | 520,286 | 5,030,418 | 717,865 | 736,224 | 10.57% |
| Van Buren | 6 | 191,950 | 1,749,393 | 353,250 | 280,601 | 10.11% |
| Wapello | 24 | 1,843,524 | 14,539,306 | 898,914 | 3,494,778 | 12.53% |
| Warren | 28 | 2,760,969 | 20,881,611 | 2,597,570 | 1,544,794 | 10.33% |
| Washington | 17 | 1,168,078 | 8,477,363 | 3,236,526 | 7,177,276 | 16.10% |
| Wayne | 6 | 205,594 | 1,831,731 | 321,759 | 697,438 | 10.79% |
| Webster | 34 | 1,791,354 | 17,713,615 | 3,328,802 | 1,552,030 | 11.30% |
| Winnebago | 13 | 465,666 | 3,662,008 | 1,999,605 | 416,033 | 11.60% |
| Winneshiek | 19 | 1,439,429 | 8,596,881 | 8,330,008 | 1,260,672 | 11.46% |
| Woodbury | 47 | 6,427,035 | 40,439,704 | 11,363,106 | 18,974,070 | 15.33% |
| Worth | 9 | 359,316 | 4,171,869 | 720,387 | 1,073,248 | 13.83% |
| Wright | 16 | 745,381 | 4,856,305 | 2,107,603 | 167,077 | 9.31% |
| Total | 2,079 | 199,380,478 | 1,364,321,279 | 402,720,827 | 435,041,822 | 13.40% |

Source: 2017 Retailers Fuel Gallons Annual Reports

Note: OTHER Includes Adams, Davis, Decatur and Monroe counties, as they all had less than five retailers reporting.

Appendix
Iowa Gasoline, Diesel, and Biofuel Sales for Calendar Year 2016

| Fuel Type | Locations | Gallons Sold | Pure Petroleum/Diesel | Pure Biofuel |
|--|--------------|----------------------|-----------------------|--------------------|
| Gasoline (Non-Ethanol) | 1,748 | 218,582,285 | 218,582,285 | 0 |
| Ethanol | | | | |
| E10 | 2,045 | 1,349,450,366 | 1,214,505,329 | 134,945,037 |
| E15 Registered | 124 | 4,951,912 | 4,209,125 | 742,787 |
| E15 Flex | 36 | 582,203 | 494,873 | 87,330 |
| E20 | 89 | 3,031,908 | 2,425,526 | 606,382 |
| E85 | 257 | 13,471,861 | 2,829,091 | 10,642,770 |
| Total Ethanol | 2,050 | 1,371,488,250 | 1,224,463,944 | 147,024,306 |
| Total Gasoline and Ethanol | 2,129 | 1,590,070,535 | 1,443,046,229 | 147,024,306 |
| Ethanol Share | 96.3% | 86.3% | | 9.2% |
| Clear Diesel (Non-Biodiesel) | 1,168 | 285,060,665 | 285,060,665 | 0 |
| Clear Biodiesel | | | | |
| Clear B1-B4 | 90 | 9,491,062 | 9,112,369 | 378,693 |
| Clear B5-B10 | 383 | 95,230,140 | 87,992,649 | 7,237,491 |
| Clear B11-B19 | 233 | 203,079,356 | 174,242,087 | 28,837,269 |
| Clear B20-B49 | 158 | 37,064,676 | 29,651,741 | 7,412,935 |
| Clear B50-B100 | 9 | 28,215 | 14,108 | 14,108 |
| Subtotal Clear Biodiesel | 471 | 344,893,449 | 301,012,954 | 43,880,495 |
| Total Clear Diesel | 1,410 | 629,954,114 | 586,073,619 | 43,880,495 |
| Clear Biodiesel Share | 28.7% | 54.7% | | 7.0% |
| Dyed Diesel (Non-Biodiesel) | 313 | 176,701,857 | 176,701,857 | 0 |
| Dyed Biodiesel | | | | |
| Dyed D1-D4 | 30 | 2,148,567 | 2,062,839 | 85,728 |
| Dyed D5-D10 | 104 | 31,470,394 | 29,896,874 | 1,573,520 |
| Dyed D11-D19 | 16 | 468,334 | 401,831 | 66,503 |
| Dyed D20-D49 | 16 | 795,018 | 636,014 | 159,004 |
| Dyed D50-D100 | 17 | 73,406 | 36,703 | 36,703 |
| Subtotal Dyed Biodiesel | 129 | 34,955,719 | 33,034,261 | 1,921,458 |
| Total Dyed Diesel | 355 | 211,657,576 | 209,736,118 | 1,921,458 |
| Dyed Biodiesel Share | 29.2% | 16.5% | | 0.9% |
| Total Biodiesel | 514 | 379,849,168 | 334,047,215 | 45,801,953 |
| Total Diesel and Biodiesel | 1,444 | 841,611,690 | 795,809,737 | 45,801,953 |
| Biodiesel Share | 35.6% | 45.1% | | 5.4% |
| Total Fuel | 2,166 | 2,431,682,225 | 2,238,855,967 | 192,826,258 |
| Pure Biofuel Share of Total Gasoline and Diesel Sales | | | | 7.9% |
| Biofuel Distribution Percentage | | | | 12.1% |

Source: 2016 Retailers Fuel Gallons Annual Reports
Revised October 2017