



Iowa Department of
REVENUE

**2019 Retailers Fuel Gallons
Annual Report**

April 2020

Prepared By:
Hamid Awan
Research and Policy Division

Introduction

In 2006, the Iowa General Assembly enacted HF 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 (the Department), 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 around 85 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 2019 report reveals the overall biofuel distribution percentage gained five tenths of a percentage point from 2018. While retailers reported higher sales of Registered E15, Flex Fuel E15 and E20, their reported sales of all other ethanol blends declined. Lower sales of clear B1-B4 and B5-B10 fuel type were observed as compared to other clear biodiesel blends.

Reporting Requirements

Fuel retailers were directed to complete the Department's webform to report 2019 annual fuel sales. Retailers who indicated a lack of technology were able to 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 2019

The Department identified 2,451 potential retail locations at which fuel may have been sold at retail during 2019. Emails with a link to the webform were sent to 458 retailers who provided email addresses on their calendar year 2018 annual reports. Postcards with directions for completing the online report were mailed to another 797 retailers, which were identified using motor fuel license information from the Iowa Department of Agriculture and Land Stewardship and the Department of Revenue eligible purchaser's database. Electronic files were emailed to 20 large fuel retailers with 1,191 locations, providing an alternate reporting option to the station-by-station webform. Paper reports were mailed to 5 locations where operators indicated a lack of online access.

The Department received reports representing 2,120 retail locations, a response rate of 86.4 percent compared to 87.8 percent in 2018. The 2,120 locations reported 2.40 billion gallons of retail fuel sales (see Table 1). Of the reporting 2,120 Iowa retail locations, 1,968 reported selling at least one type of ethanol blend and 808 reported selling one or more blends of clear or dyed biodiesel. Of the locations selling ethanol, 1,958 reported selling E10 fuel, 333 reported selling Registered E15, Flex Fuel E15 and/or E20 and 350 reported selling E85.

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. Based on blend details provided by a small number of biofuel retailers in 2015, the following assumptions are used to calculate the number of gallons of pure biofuel gallons for each biofuel type:

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

It is necessary to calculate the amount of pure biofuel being sold (as a percentage of all fuel sales) in order to evaluate the progress of meeting the goal of biofuel replacing 25 percent of gasoline by 2020. Table 1 provides estimates of the breakdown between pure petroleum (or diesel) and pure biofuel for each fuel type.

Evaluation by Fuel Type

Gasoline Fuel Sales

During 2019, the reported amount of E10 gasoline sold equaled 1,284.3 million gallons (see Table 1). E15 gasoline (both Registered and Flex Fuel) sales equaled 49.0 million gallons (with 96.9 percent sold through registered pumps), E20 gasoline sales equaled 1.1 million gallons, and E85 gasoline sales equaled 19.0 million gallons. Combined, ethanol blended fuel represented 86.5 percent of total reported gasoline fuel sales during the year. Blends of E15 or higher comprised 4.4 percent of total gasoline sales in 2019.

Of the 2,027 locations that sold gasoline, 1,968 sold one or more ethanol blend while 383 sold E15 or higher blends. The aggregate ethanol gallonage, which is the number of pure ethanol gallons sold by retailers in 2019, was 151.0 million gallons.

With around 14 percent of locations failing to complete the Retailers Fuel Gallons Annual Report for 2019, 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 2019 through January 2020 were compared with gallons reported as sold by retailers completing the 2019 annual report. During this period, fuel taxes were paid on a total of 1,657.7 million gallons of gasoline fuels. Comparatively, the 86.4 percent of retail locations that filed annual reports indicated 1,565.0 million gallons of gasoline fuels were sold, including all ethanol blends and non-ethanol gasoline. This reported amount equates to 94.4 percent of taxable gallons in 2019.

Diesel Fuel Sales

Based on Retailers Fuel Gallons Annual Reports submitted to the Department, 1,428 retail locations sold clear diesel fuel, with 784 of these locations selling at least one blend of clear biodiesel fuel during 2019. Additionally, 336 retail locations sold dyed diesel fuel, with 135 of these locations selling at least one blend of dyed biodiesel fuel during 2019.

During 2019, the reported amount of clear B1-B10 diesel sold equaled 76.5 million gallons, B11-B19 diesel sold equaled 291.2 million gallons, and B20 or higher blend diesel sold equaled 77.4 million gallons. Combined, biodiesel blended fuel represented 69.9 percent of total reported clear diesel sales during the year. Blends of B11 or higher comprised 57.8 percent of total clear diesel sales in 2019.

The amount of clear biodiesel sold in 2019 equaled 445.2 million gallons, or 69.9 percent of total clear diesel fuel sales. Retailers reported selling 636.9 million gallons of clear diesel fuel. In comparison, the number of taxable (clear) gallons of diesel fuel shipped during 2019, as reported on the Monthly Fuel Tax Reports, equaled 756.4 million. Therefore, retailers completing annual reports for 2019 accounted for 86.3 percent of diesel fuel on which fuel taxes were paid.

Annual reports for 2019 indicated 200.7 million gallons of dyed (non-taxed) diesel fuel were sold, including 49.9 million biodiesel gallons (24.9%). Dyed diesel gallons are not captured in the Monthly Fuel Tax Reports.

Total diesel gallons reported were 837.6 million, and total biodiesel gallons were 495.1 million; therefore, biodiesel blended gallons accounted for 59.1 percent of clear and dyed diesel gallons sold by reporting retailers. Pure biodiesel comprised 7.9 percent of total diesel and biodiesel sales. The aggregate biodiesel gallonage, which is the number of pure biodiesel gallons sold by retailers in 2019, was 65.9 million gallons. Pure biodiesel sold in clear diesel comprised 9.8 percent of gallons sold while pure biodiesel sold in dyed diesel comprised only 1.7 percent of gallons sold.

Together, pure ethanol and pure biodiesel comprised 9.0 percent of all fuel sales reported by retailers in Iowa. However, the formula specified in Iowa Code section 452.31(8) for the Biofuel Distribution Percentage (BDP) 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 13.9 percent of Iowa retail motor fuel sales in 2019. This level is a slight increase from the percentage calculated for 2018 (see Appendix)

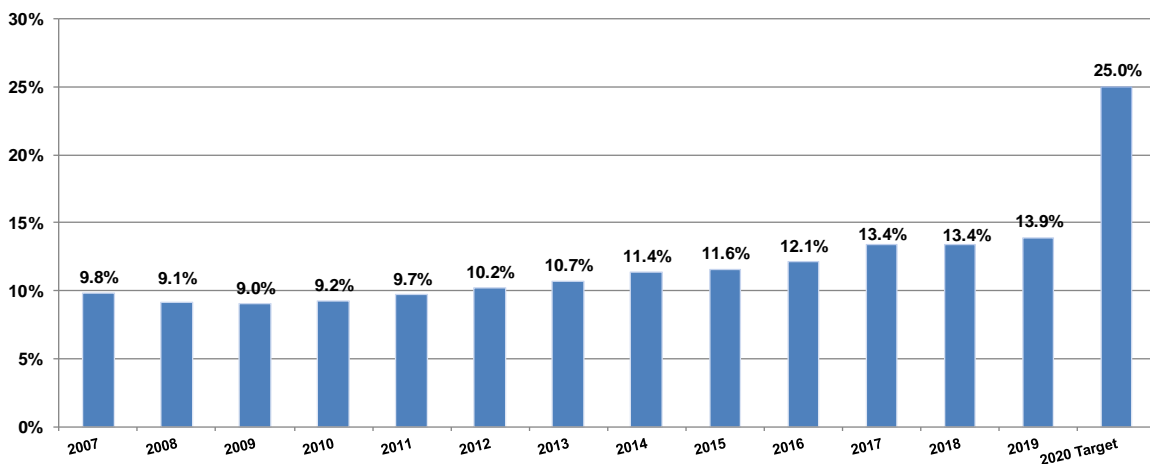
Table 1. Iowa Gasoline, Diesel, and Biofuel Sales for Calendar Year 2019

Fuel Type	Locations	Gallons Sold	Pure Petroleum/Diesel	Pure Biofuel
Gasoline (Non-Ethanol)	1,633	211,549,040	211,549,040	0
Ethanol				
E10	1,958	1,284,329,057	1,155,896,151	128,432,906
E15 Registered	203	47,439,116	40,323,249	7,115,867
E15 Flex Fuel	41	1,520,185	1,292,157	228,028
E20	89	1,056,578	845,262	211,316
E85	350	19,029,150	3,996,122	15,033,029
Total Ethanol	1,968	1,353,374,086	1,202,352,941	151,021,145
Total Gasoline and Ethanol	2,027	1,564,923,126	1,413,901,981	151,021,145
Ethanol Share		86.5%		
Clear Diesel (Non-Biodiesel)	998	191,671,366	191,671,366	0
Clear Biodiesel				
Clear B1-B4	66	6,972,584	6,694,378	278,206
Clear B5-B10	309	69,538,706	64,253,764	5,284,942
Clear B11-B19	610	291,233,125	249,878,021	41,355,104
Clear B20-B49	214	76,918,098	61,534,478	15,383,620
Clear B50-B100	13	531,379	265,690	265,690
Subtotal Clear Biodiesel	784	445,193,892	382,626,331	62,567,561
Total Clear Diesel	1,428	636,865,258	574,297,697	62,567,561
Clear Biodiesel Share		69.9%		
Dyed Diesel (Non-Biodiesel)	298	150,789,637	150,789,637	0
Dyed Biodiesel				
Dyed D1-D4	29	695,194	667,456	27,738
Dyed D5-D10	96	40,713,330	38,677,664	2,035,667
Dyed D11-D19	38	7,025,840	6,028,171	997,669
Dyed D20-D49	25	1,453,579	1,162,863	290,716
Dyed D50-D100	10	41,806	20,903	20,903
Subtotal Dyed Biodiesel	135	49,929,749	46,557,056	3,372,693
Total Dyed Diesel	336	200,719,386	197,346,693	3,372,693
Dyed Biodiesel Share		24.9%		
Total Biodiesel	808	495,123,641	429,183,388	65,940,253
Total Diesel and Biodiesel	1,443	837,584,644	771,644,391	65,940,253
Biodiesel Share		59.1%		
Total Fuel	2,120	2,402,507,770	2,185,546,372	216,961,398
Pure Biofuel Share of Total Gasoline and Diesel Sales				9.0%
Biofuel Distribution Percentage				13.9%

Source: 2019 Retailers Fuel Gallons Annual Report

Figure1 presents the Biofuel Distribution Percentage (BDP) calculated for calendar years 2007 through 2019. Between 2010 and 2013, the BDP 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. In 2017, retailers reported the largest increase in statewide biofuel usage, mostly reflecting higher sales of E15, E85, and B20. Higher gallons of pure ethanol accounted for 30 percent of the growth with gains in pure biodiesel gallons accounting for the other 70 percent.

Figure1. Statewide Biofuel Distribution Percentage, 2007-2019



Source: Retailers Fuel Gallons Annual Reports, 2007-2019

Although the BDP improved only 0.5 percentage points between 2018 and 2019, Table 2 indicates pure ethanol gallons decreased by 0.2 million gallons. The changes were not uniform across ethanol and biodiesel blends. The ethanol blend that recorded growth was registered E15, with reported sales 13.2 million gallons (39.0%) higher than 2018. Similarly, E15 flex and E20 showed upward growth of 14.8% and 6.7% respectively. The gains in pure clear biodiesel were experienced in all blends except B1-B10. For dyed biodiesel, gains were observed except for D1-D4 and D50-D100 blends.

Table 2. Change in Biofuel and Pure Biofuel Sales Between 2018 and 2019

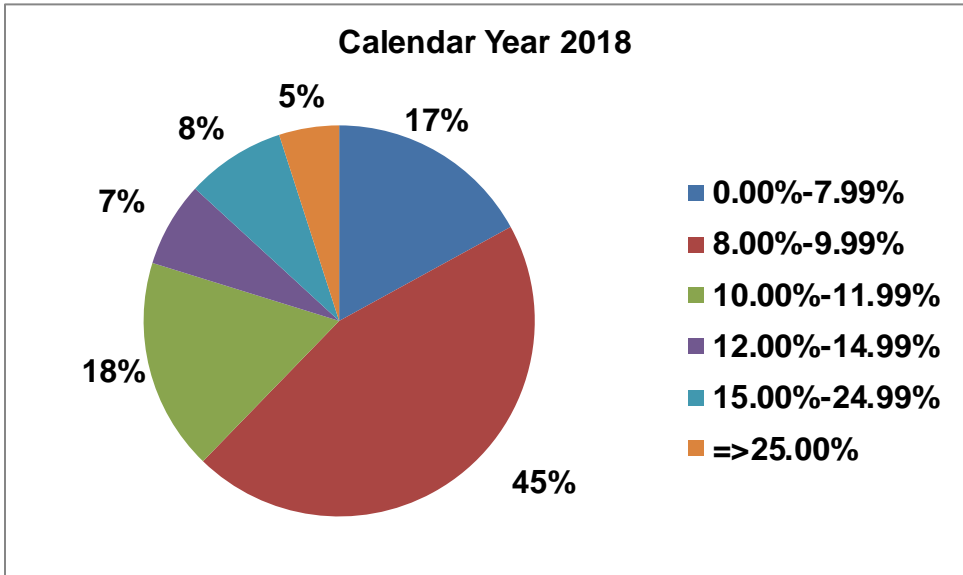
Fuel Type	Change in Biofuel Gallons Sold	Percent Change in Biofuel Gallons	Change in Pure Biofuel Gallons Sold	Percent Change in Pure Biofuel Gallons
Ethanol				
E10	-15,735,063	-1.2%	-1,573,506	-1.2%
E15 Registered	13,298,306	39.0%	1,994,746	39.0%
E15 Flex	196,421	14.8%	29,463	14.8%
E20	66,415	6.7%	13,283	6.7%
E85	-1,132,708	-5.6%	-894,839	-5.6%
Total Ethanol	-3,306,629	-0.2%	-430,854	-0.3%
Clear Biodiesel				
Clear B1-B4	-4,600,692	-39.8%	-183,568	-39.8%
Clear B5-B10	-39,815,652	-36.4%	-3,025,990	-36.4%
Clear B11-B19	58,522,158	25.1%	8,310,146	25.1%
Clear B20-B49	7,873,283	11.4%	1,574,657	11.4%
Clear B50-B100	275,686	107.8%	137,843	107.8%
Total Clear Biodiesel	22,254,783	5.3%	6,813,089	12.2%
Dyed Biodiesel				
Dyed D1-D4	-639,409	-47.9%	-25,512	-47.9%
Dyed D5-D10	10,579,713	35.1%	528,986	35.1%
Dyed D11-D19	3,489,452	98.7%	495,502	98.7%
Dyed D20-D49	598,798	70.1%	119,760	70.1%
Dyed D50-D100	-30,116	-41.9%	-15,058	-41.9%
Total Dyed Biodiesel	13,998,439	39.0%	1,103,677	48.6%
Total Change	32,946,592	1.8%	7,485,912	3.5%

Sources: 2018 and 2019 Retailers Fuel Gallons Annual Reports

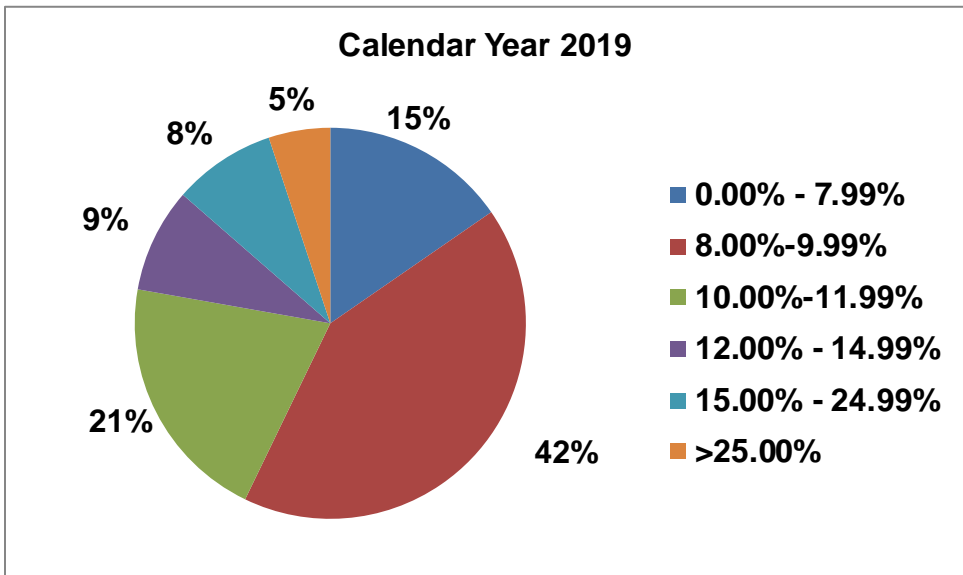
Although the 25 percent goal is for the state as a whole, it is instructive to consider that same measure at the retailer and county level. Figure 2 illustrates the breakdown of retail locations by BDP, calculated using the sales reported by each retail location for which annual reports were filed in 2018 or 2019. 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 BDP includes any pure biodiesel reported at those locations.

The share of stations reporting a BDP equal to or greater than 25 percent remained unchanged in 2019 at 5 percent. The percent of retailers reporting from 0 percent to 7.99 percent decreased from 17.0 percent in 2018 to 15.0 percent in 2019. The share of retailers in the 8.0 to 9.99 percent range declined 3 percentage points from 45.0 percent in 2018 to 42.0 percent in 2019. The share with a BDP between 10.0 and 11.99 percent increased by three percentage point from 18.0 percent in 2018 to 21.0 percent in 2019. The share of retailers with a BDP between 12.0 and 14.99 percent increased from 7.0 to 9.0 percent and the share between 15.0 and 24.99 percent remained unchanged from 2018.

Figure 2: Biofuel Distribution Percentage by Retail Location for Calendar Years 2018 and 2019



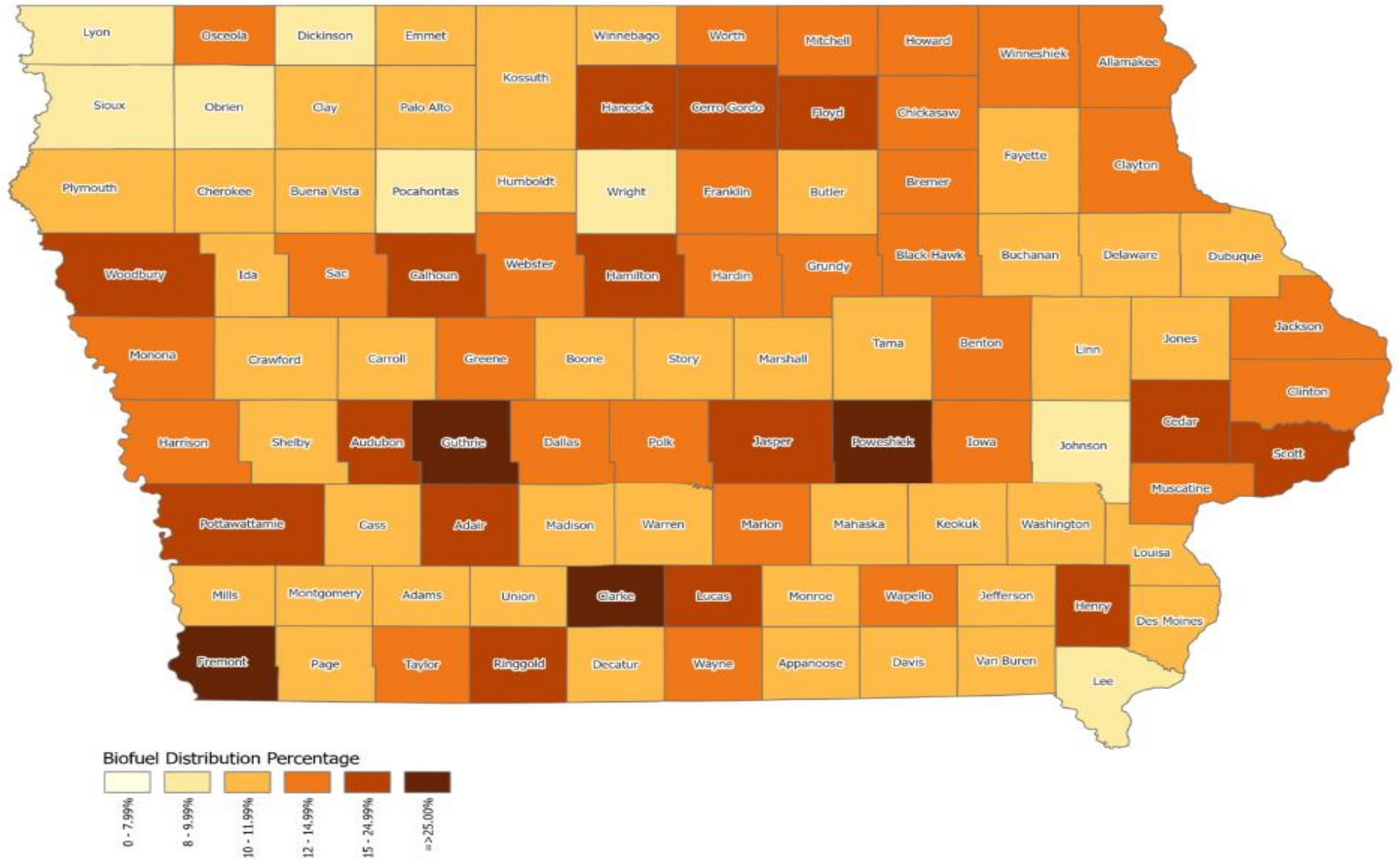
Source: 2018 Retailers Fuel Gallons Annual Reports



Source: 2019 Retailers Fuel Gallons Annual Reports

To further illustrate the variation in sales of biofuels 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 2019 annual gallons report. All counties had a calculated biofuel distribution percentage of 9.0 percent or higher. Four counties (Clarke, Fremont, Guthrie, and Poweshiek) exceeded the 25 percent; fifteen counties had pure biofuel sales comprising between 15.0 and 24.99 percent of total gasoline sales. Twenty-eight counties fell into the 12.0 to 14.99 percent category. Aggregated retail sales in eleven counties fell in the 8.0 to 9.99 percent category, and forty-one fell into the 10.0 to 11.99 percent category. Table 3 provides the total gallons of non-ethanol gasoline, ethanol, clear and dyed non-biodiesel, clear and dyed biodiesel, and pure biofuel gallons for all counties with at least five retailers reporting sales to the Department.

Figure 3. Biofuel Distribution Percentage by County for 2019



Source: 2019 Retailers Fuel Gallons Annual Reports

Table 3. Total Gallons by County, Calendar Year 2019

County	Number of Retailers Reporting	Gasoline Sales	Ethanol Sales	Clear and Dyed Diesel Sales	Clear and Dyed Biodiesel Sales	Pure Biofuel Sales	Biofuel Distribution Percentage
Adair	19	1,514,877	7,373,322	2,887,239	4,369,693	1,435,742	16.15%
Allamakee	14	1,034,342	5,449,497	3,043,798	1,348,849	787,032	12.14%
Appanoose	14	609,674	4,878,961	1,699,712	471,242	627,099	11.43%
Audubon	7	218,790	2,233,214	2,031,189	1,000,991	415,575	16.95%
Benton	20	1,128,172	8,651,617	3,256,430	1,920,041	1,196,079	12.23%
Black Hawk	70	8,435,653	48,668,188	2,389,641	15,362,828	7,819,858	13.69%
Boone	11	909,637	7,439,454	2,666,198	4,210,644	994,294	11.91%
Bremer	16	2,047,046	9,257,307	1,351,028	2,126,179	1,386,686	12.27%
Buchanan	17	1,436,454	8,344,069	1,665,498	1,279,091	1,034,218	10.57%
Buena Vista	26	1,170,763	8,463,945	3,657,702	1,623,560	1,146,731	11.90%
Butler	14	959,353	5,625,105	3,167,816	1,098,663	778,734	11.83%
Calhoun	14	345,268	4,697,230	560,285	5,621,262	1,029,911	20.42%
Carroll	28	1,395,926	9,377,142	12,025,571	676,922	1,168,755	10.85%
Cass	15	850,691	7,053,012	4,690,040	938,766	849,959	10.75%
Cedar	17	1,495,529	12,035,450	6,420,562	8,376,303	2,562,524	18.94%
Cerro Gordo	27	4,510,900	25,753,632	11,810,230	14,779,193	5,159,753	17.05%
Cherokee	15	632,394	4,522,054	3,723,490	141,467	526,181	10.21%
Chickasaw	12	1,375,316	5,899,355	4,898,456	3,674,367	1,071,028	14.72%
Clarke	11	1,313,684	6,927,645	1,495,674	9,237,860	2,095,009	25.42%
Clay	23	988,893	5,733,043	2,666,033	818,397	730,030	10.86%
Clayton	20	1,235,335	6,863,799	438,963	1,635,414	1,033,151	12.76%
Clinton	27	1,855,636	21,013,880	4,275,572	3,924,597	2,998,492	13.11%
Crawford	11	685,662	4,696,866	2,372,882	1,159,399	587,729	10.92%
Dallas	38	5,663,862	33,949,381	6,856,383	8,349,685	5,143,083	12.98%
Decatur	5	462,175	2,536,538	122,024	329,662	335,839	11.20%
Delaware	20	1,348,578	6,620,870	4,695,797	998,075	872,225	10.94%
Des Moines	18	1,447,006	13,638,512	851,663	221,624	1,534,935	10.17%
Dickinson	24	1,831,118	8,285,092	1,073,380	347,562	929,660	9.19%
Dubuque	59	11,244,029	74,845,999	8,384,798	21,090,539	9,458,252	10.99%
Emmet	9	340,927	3,201,126	282,494	218,717	366,322	10.34%
Fayette	16	747,115	5,881,695	131,786	605,944	679,316	10.25%
Floyd	13	2,032,570	6,339,707	2,818,755	10,510,053	2,084,714	24.90%
Franklin	13	505,262	5,454,073	4,464,148	1,292,645	860,627	14.44%
Fremont	7	322,517	4,824,297	1,368,121	8,444,894	1,772,765	34.44%
Greene	10	260,879	3,963,340	388,218	2,363,577	603,951	14.30%
Grundy	14	510,325	5,203,058	6,115,775	2,020,936	821,789	14.38%
Guthrie	12	436,272	4,927,800	943,644	7,596,158	1,603,659	29.90%
Hamilton	15	2,031,489	6,494,904	1,421,414	9,130,096	2,088,425	24.49%
Hancock	7	444,247	3,838,558	1,020,488	1,562,677	679,320	15.86%
Hardin	23	1,415,307	11,239,565	5,891,884	2,383,633	1,801,900	14.24%
Harrison	14	888,667	6,451,811	3,977,044	3,743,074	1,057,604	14.41%
Henry	8	589,130	7,968,021	550,501	5,817,135	1,625,663	19.00%
Howard	8	722,237	3,690,990	1,736,352	1,412,386	561,132	12.71%
Humboldt	12	737,723	4,618,018	4,896,370	388,171	546,819	10.21%
Ida	11	575,713	3,308,569	3,084,821	253,204	451,734	11.63%
Iowa	105	5,392,393	40,899,738	19,821,570	13,682,896	5,799,884	12.53%
Jackson	13	1,044,209	6,966,735	347,398	2,327,083	1,145,409	14.30%
Jasper	27	2,025,186	16,750,397	2,718,514	16,317,667	4,201,497	22.38%

Table 3 (cont). Total Gallons by County, Calendar Year 2019

County	Number of Retailers Reporting	Gasoline Sales	Ethanol Sales	Clear and Dyed Diesel Sales	Clear and Dyed Biodiesel Sales	Pure Biofuel Sales	Biofuel Distribution Percentage
Jefferson	16	843,500	5,104,688	1,269,128	1,240,398	702,516	11.81%
Johnson	57	9,947,296	49,047,629	8,595,812	1,511,062	5,558,299	9.42%
Jones	10	734,378	6,420,338	1,843,382	735,953	744,439	10.40%
Keokuk	7	337,037	2,847,667	1,475,707	382,469	343,902	10.80%
Kossuth	12	427,936	4,679,543	2,248,898	423,522	566,717	11.10%
Lee	17	1,624,505	9,987,312	1,308,646	578,829	1,054,171	9.08%
Linn	91	12,993,565	81,690,866	9,578,841	11,416,944	11,073,503	11.70%
Louisa	8	470,974	3,700,955	729,835	703,001	482,508	11.57%
Lucas	7	432,845	2,566,601	663,107	4,230,789	530,457	17.69%
Lyon	13	862,855	4,506,353	3,184,119	580,751	533,196	9.93%
Madison	12	810,185	6,730,248	5,697,562	1,215,494	863,740	11.45%
Mahaska	17	928,817	10,378,750	1,812,730	2,163,242	1,321,416	11.69%
Marion	21	1,818,727	13,353,905	4,976,158	1,791,891	1,832,393	12.08%
Marshall	22	2,131,496	12,002,906	1,394,083	2,778,166	1,590,770	11.25%
Mills	11	1,003,164	4,906,542	2,002,677	436,226	599,112	10.14%
Mitchell	9	555,405	3,486,591	705,208	496,547	491,896	12.17%
Monona	12	611,589	4,915,356	1,720,364	1,292,459	724,772	13.11%
Monroe	5	365,306	3,456,608	171,741	505,597	400,806	10.49%
Montgomery	7	511,588	3,414,451	268,693	647,730	433,411	11.04%
Muscatine	15	1,635,317	12,395,366	332,705	1,486,218	1,698,319	12.10%
O'Brien	17	759,466	5,274,085	1,501,649	311,687	602,190	9.36%
Osceola	10	228,919	2,456,360	3,345,516	821,289	342,040	12.74%
Other	11	565,395	4,005,878	1,036,108	938,232	505,303	11.05%
Page	6	354,784	5,054,917	1,833,328	808,538	588,498	10.88%
Palo Alto	12	441,899	4,068,726	3,487,142	121,106	471,918	10.46%
Plymouth	18	2,593,711	11,085,217	14,283,421	2,376,011	1,500,323	10.97%
Pocahontas	5	166,052	1,827,783	109,131	97,252	196,588	9.86%
Polk	198	34,972,248	193,531,597	26,874,086	66,792,202	30,927,502	13.53%
Pottawattamie	64	10,591,183	48,766,390	14,070,168	53,748,590	13,453,538	22.67%
Poweshiek	24	2,892,244	13,216,039	3,454,599	23,800,210	5,215,782	32.38%
Ringgold	6	177,212	1,419,494	616,935	1,439,752	272,701	17.08%
Sac	12	519,903	4,629,909	1,478,242	1,208,330	624,292	12.12%
Scott	106	8,812,794	99,949,340	4,811,561	50,724,343	18,240,320	16.77%
Shelby	11	471,099	4,191,902	2,400,531	1,441,709	545,372	11.70%
Sioux	21	1,977,379	9,312,467	10,349,032	627,945	1,086,827	9.63%
Story	41	5,554,936	36,393,928	1,832,390	5,267,734	4,877,388	11.63%
Tama	18	836,265	6,753,162	3,034,750	1,045,655	888,392	11.71%
Union	10	491,485	4,672,193	931,579	530,361	571,637	11.07%
Wapello	25	2,105,566	14,714,800	988,873	3,993,596	2,150,645	12.79%
Warren	28	3,005,102	21,407,775	780,117	2,719,041	2,694,895	11.04%
Washington	14	740,740	13,513,030	1,979,859	1,595,290	1,590,542	11.16%
Wayne	7	196,707	2,629,168	292,576	1,431,427	359,623	12.73%
Webster	33	1,799,828	16,787,399	1,786,735	3,631,043	2,414,829	12.99%
Winnebago	15	534,733	3,884,472	1,927,263	160,618	476,637	10.79%
Winneshiek	18	1,304,814	8,824,945	8,789,192	2,005,251	1,305,864	12.89%
Woodbury	46	9,471,223	38,627,416	11,297,865	24,287,907	7,987,227	16.61%
Worth	9	1,051,963	3,146,485	843,237	1,097,325	532,919	12.69%
Wright	17	715,976	4,779,953	1,188,371	280,088	530,169	9.65%
Total	2120	211,549,040	1,353,374,086	342,461,003	495,123,641	216,961,398	13.9%

Source: 2019 Retailers Fuel Gallons Annual Reports

Note: Other includes Adams, Davis, Taylor and Van Buren Counties where less than five retailers reported sales.

Appendix
Iowa Gasoline, Diesel, and Biofuel Sales for Calendar Year 2018

Fuel Type	Locations	Gallons Sold	Pure Petroleum/Diesel	Pure Biofuel
Gasoline (Non-Ethanol)	1,646	202,314,938	202,314,938	0
Ethanol				
E 10	1,968	1,300,064,120	1,170,057,708	130,006,412
E 15 Registered	187	34,140,810	29,019,689	5,121,122
E 15 Flex Fuel	33	1,323,764	1,125,199	198,565
E 20	85	990,163	792,130	198,033
E 85	310	20,161,858	4,233,990	15,927,868
Total Ethanol	1,975	1,356,680,715	1,205,228,717	151,451,999
Total Gasoline and Ethanol	2,042	1,558,995,653	1,407,543,655	151,451,999
Ethanol Share	96.7%	87.0%		9.7%
Clear Diesel (Non-Biodiesel)	1,148	214,128,219	214,128,219	0
Clear Biodiesel				
Clear B1-B4	83	11,573,276	11,111,502	461,774
Clear B5-B10	652	109,354,358	101,043,427	8,310,931
Clear B11-B19	480	232,710,967	199,666,010	33,044,957
Clear B20-B49	116	69,044,815	55,235,852	13,808,963
Clear B50-B100	12	255,693	127,847	127,847
Subtotal Clear Biodiesel	771	422,939,109	367,184,637	55,754,472
Total Clear Diesel	1,435	637,067,328	581,312,856	55,754,472
Clear Biodiesel Share	53.7%	66.4%		8.8%
Dyed Diesel (Non-Biodiesel)	318	153,056,755	153,056,755	0
Dyed Biodiesel				
Dyed D1-D4	27	1,334,603	1,281,352	53,251
Dyed D5-D10	97	30,133,617	28,626,936	1,506,681
Dyed D11-D19	34	3,536,388	3,034,221	502,167
Dyed D20-D49	24	854,781	683,824	170,956
Dyed D50-D100	14	71,922	35,961	35,961
Subtotal Dyed Biodiesel	126	35,931,310	33,662,295	2,269,016
Total Dyed Diesel	348	188,988,065	186,719,050	2,269,016
Dyed Biodiesel Share	43.9%	19.0%		1.2%
Total Biodiesel	792	458,870,419	400,846,932	58,023,487
Total Diesel and Biodiesel	1,450	826,055,393	768,031,906	58,023,487
Biodiesel Share	54.6%	55.5%		7.0%
Total Fuel	2,133	2,385,051,047	2,175,575,561	209,475,486
Pure Biofuel Share of Total Gasoline and Diesel Sales				8.8%
Biofuel Distribution Percentage				13.4%

Source: 2018 Retailers Fuel Gallons Annual Reports