

Analysis of Ethanol-Compatible Fleet for Calendar Year 2022
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This study evaluates the size of the market that can consume E15 (a mixture of 15% ethanol and 85% gasoline (by volume) in calendar year 2022 in the U.S. The study computes the share of vehicles on the road in calendar year 2022 that can legally use E15. This is a combination of flex-fuel vehicles (FFVs) and non-FFVs of model years 2001 or later (“MY2001+”), since all FFVs are approved to use E15 regardless of model year, and all MY2001+ non-FFVs have been approved by EPA to use E15.

Vehicles on the Road in Calendar Year 2022 that Can Legally Use E15

A. FFVs on the Road

According to the U.S. Energy Information Administration’s Annual Energy Outlook for 2021 (hereafter referred to as AEO2021), there are expected to be 20.409 million FFVs on the road in calendar year 2022, as shown in Table 1.¹

Table 1. “Ethanol-Flex Fuel ICE” Stock (millions) in Calendar Year 2022		
LDVs	LDTs	Total
4.673	15.736	20.409

B. Vehicles on the Road Approved for Use of E15

In October 2010, the U.S. Environmental Protection Agency (EPA) approved a waiver permitting the use of E15 (a gasoline mixture containing 15% ethanol) in model year 2007 and newer autos (light duty motor vehicles, LDVs) and light duty motor trucks (LDTs). In January 2011, the EPA extended the waiver to permit the use of E15 in 2001 to 2006 model year autos and light duty trucks. Thus, all MY2001+ vehicles may use E15. Of course, FFVs are also permitted to use E15, regardless of model year. E15 is not allowed in MY2000- non-FFVs.

We used the MOVES3.0.2 model (September 2021 version) to estimate the percentage of MY2001+ vehicles on the road in calendar year 2022. This analysis was performed for 3 different parameters – population, vehicle miles traveled (VMT), and energy.² Results are shown in Table 2.

¹ Annual Energy Outlook 2021 With Projections to 2050, U.S. Energy Information Administration, <https://www.eia.gov/forecasts/aeo/index.cfm>

² All 3 parameters were obtained from MOVES3 output.

Table 2. Analysis of Fleet by Model Year by Percentage				
Calendar Year	Parameter	Class	MY2000- (%)	MY2001+ (%)
2022	Population	LDV	3.33	96.67
		LDT	4.09	95.91
		Combined	3.68	96.32
	Vehicle Miles Traveled	LDV	1.75	98.25
		LDT	2.16	97.84
		Combined	1.95	98.05
	Energy	LDV	2.26	97.74
		LDT	2.91	97.09
		Combined	2.61	97.39

Table 2 shows that 96.32% of the combined LDV plus LDT on-road fleet are vehicles from the 2001+ model year group. Further, these vehicles accumulate 98.05% of the vehicle miles traveled, and use 97.39% of the energy of the on-road LDV+LDT fleet.

AEO2021 further shows that there are 257.161 million LDVs and LDTs on the road in 2022, of which 254.600 million are capable of using gasoline. If we subtract the FFVs from Table 1, we obtain 234.190 million. Table 3 shows these non-FFVs divided into model year 2000 and earlier, and model year 2001+, using the population fractions from Table 2.

Table 3. MY2000- and MY2001+ Non FFV LDV+LDT Populations in Calendar Year 2022			
Calendar Year	Non FFV LDV+LDT Population (millions)	MY2000- (millions)	MY2001+ (millions)
2022	234.190	8.668	225.522

The total number of vehicles available to use E15 is then the FFVs, plus the 2001+ non-FFVs from Table 3. This value is 20.409 million plus 225.522 million, or 245.931 million vehicles.