

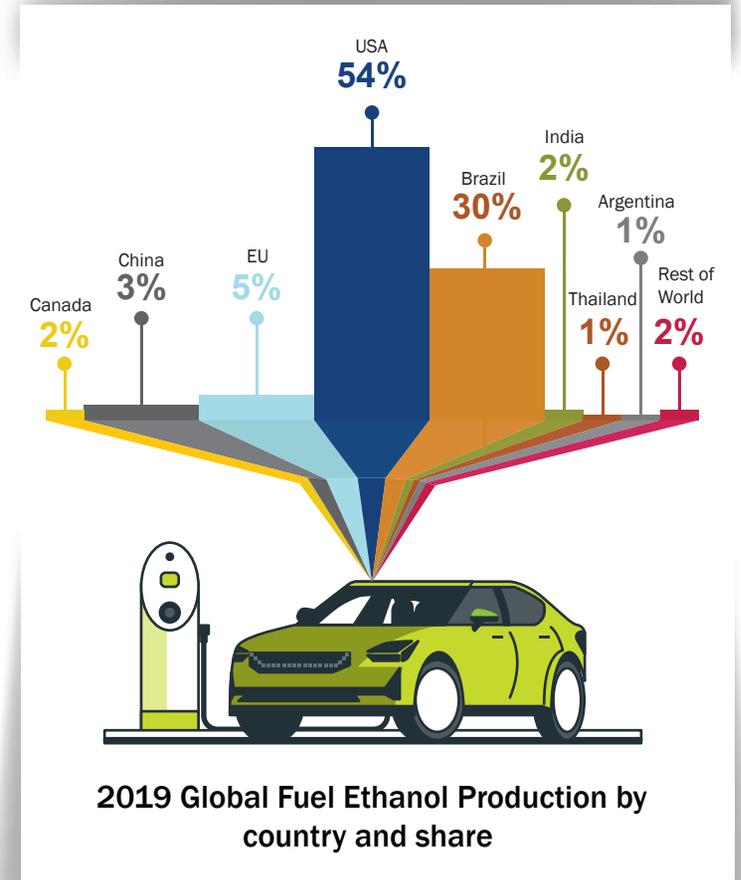
Global Ethanol Supply & Demand 2019

	 United States	 Brazil	 European Union	 China	 India	 Canada	 Philippines
Production	59.63 billion liters	32.3 billion liters	5.44 billion liters	4.31 billion liters	3 billion liters	1.89 billion liters	320 million liters
Consumption	55 billion liters	31.8 billion liters	5.95 billion liters	4.39 billion liters	3.78 billion liters	3.2 billion liters	665 million liters
Imports	1.29 billion liters	1.46 billion liters	1.22 billion liters	104 million liters	575 million liters	1.28 billion liters	341 million liters
Exports	5.52 billion liters	1.94 billion liters	242 million liters	21.2 million liters	50 million liters	82.6 billion liters	exports negligible
Source of Production	Primarily corn	Primarily sugarcane; new plants using corn	Primarily sugar beet, wheat and corn	Primarily corn	Primarily molasses	Corn and wheat	Primarily molasses
Blend	Average blend 10.2%; E15, E30 and E85 offered in some states.	Gasoline with a mandated 27% ethanol blend or 100% pure hydrous ethanol for consumers to choose from; effective national blend rate of 53.7%.	Each EU member state has a different ethanol blending policy in place. Average blend 5.9% in 2019.	Required blend levels vary by province, with now-on-hold E10 goal by 2020; the national blend rate in 2019 was 2.5%.	5%	Required blend levels vary by province; the national blend rate is estimated at 6.6%.	10%
Vehicles Fleet (Flex or Normal)	Primarily standard; flex for E30 or E85 only.	Mainly flex. Motorbikes and other two-strokes engines use E27.	Flex and standard	Primarily standard	Flex or standard; standard	Primarily standard	Standard

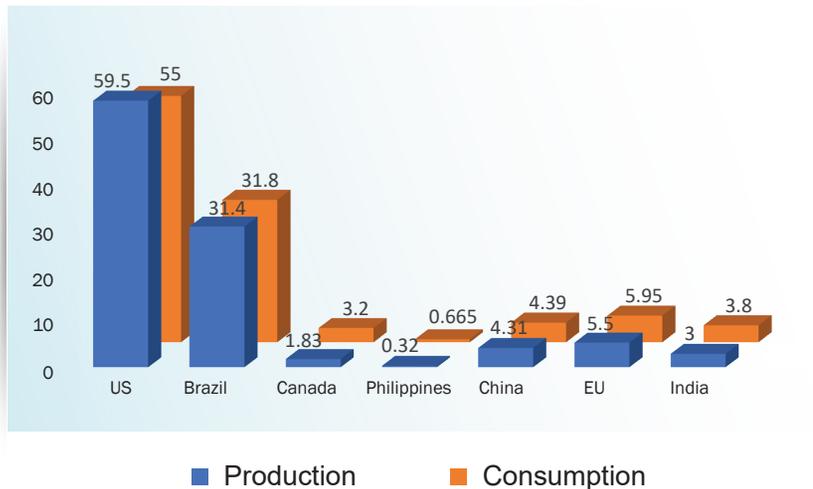
World Fuel Ethanol Production in Million Liters

Region	2015	2016	2017	2018	2019
USA	55,970	58,261	60,238	60,824	59,633
Brazil	27,216	25,553	25,250	30,278	32,395
EU	5,243	5,205	5,292	5,405	5,443
China	3,077	3,099	3,255	3,975	4,315
Canada	1,648	1,648	1,777	1,814	1,890
India	737	1,040	794	1,512	2,003
Thailand	1,263	1,217	1,399	1,474	1,588
Argentina	798	998	1,096	1,096	1,096
Rest of World	1,478	1,852	1,565	2,075	2,268
Total	97,426	98,968	1,00,661	1,08,448	1,09,718

Source: Renewable Fuels Association



2019 Global Ethanol Usage (Billion Liters)



2019 Global Ethanol Trade (Million Liters)

