

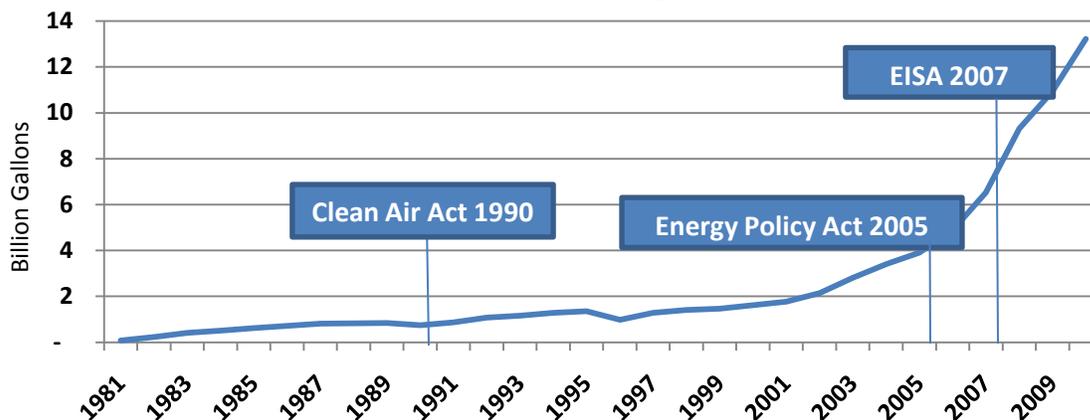
U.S. on Track to become World's Largest Ethanol Exporter in 2011

The United States has a long history as a net importer of ethanol,¹ which is largely blended with gasoline and used for transportation fuel. As recently as 2008, the United States imported 556 million gallons of ethanol, worth \$1.25 billion, to help meet its fuel needs. However, in 2010 the United States became the global low-cost ethanol producer, manufacturing 13.2 billion gallons – enough to not only meet U.S. demand for 12 billion gallons of fuel ethanol, but also to generate \$825 million in export revenues. Through the first five months of 2011, the United States has already exceeded the 2010 export level and is on pace to surpass Brazil as the world's largest ethanol exporting nation in 2011.

U.S. Ethanol Production

Ethanol production in the United States has steadily grown since the late 1990s when the United States began to use it as a fuel additive because of its environmental benefits. Federal legislation is among the factors that have driven growth in production, with the Energy Independence and Security Act of 2007 (RFS2) requiring 15 billion gallons of corn-based ethanol to be blended into transportation fuels by 2015. In response to the increased demand, biorefineries quickly expanded production while new technologies increased the efficiency of existing plants. The increased demand led to a rapid rise in the number of U.S. ethanol plants – from 50 plants in 17 states producing approximately 1.4 billion gallons in 1998, to 204 facilities in 29 states producing more than 13.2 billion gallons in 2010².

U.S. Ethanol Production, 1981-2010



Source: Department of Commerce, U.S. Census Bureau, Foreign Trade Statistics

¹ Ethanol data are for both fuel and industrial use and does not include ethanol produced for alcoholic beverages.

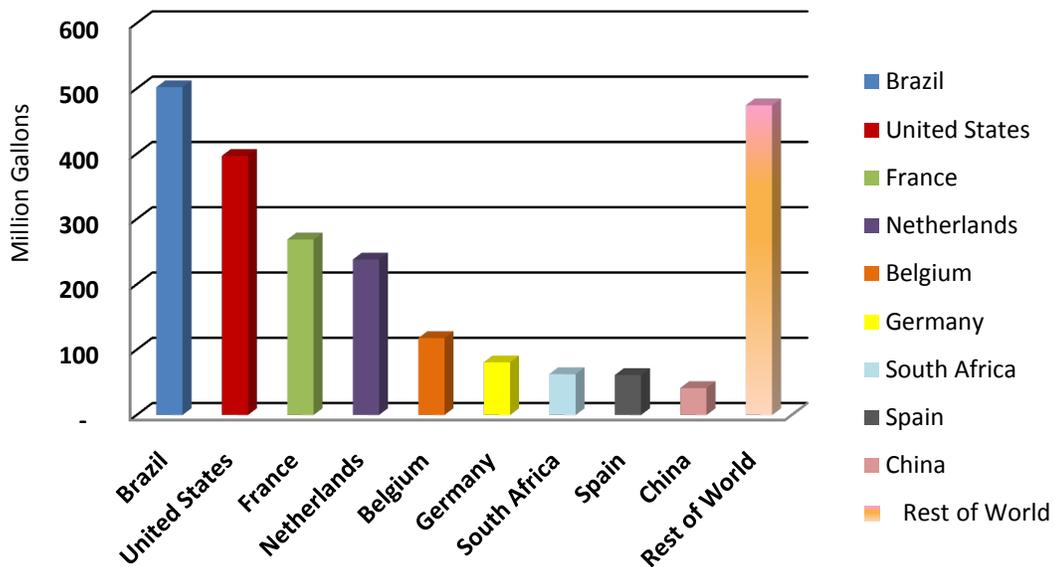
² Renewable Fuels Association

2010: A Year of Rapidly Changing Ethanol Trade Patterns

In the United States, ethanol is primarily made from corn. In Brazil, the world's second-largest ethanol producer, sugarcane is the primary feedstock. Together, the United States and Brazil account for approximately 88 percent of global ethanol production and trade.

Historically, Brazil has been the world's low-cost supplier of ethanol, mainly because sugarcane has a higher sugar content than corn. As the low-cost producer, Brazil has historically dominated ethanol trade, providing 50 percent of global ethanol exports as recently as 2007. The prices of U.S. and Brazilian ethanol tend to rise and fall with the price of their respective feedstocks and the price of petroleum. Beginning in February 2009, the price of corn became increasingly competitive with the rising price of sugar, with the relative price differences widening in favor of corn throughout 2010. The U.S. dollar depreciated 35 percent versus the Brazilian Real from its peak in November 2008 through April 2011 further increasing U.S. competitiveness in the world ethanol market.

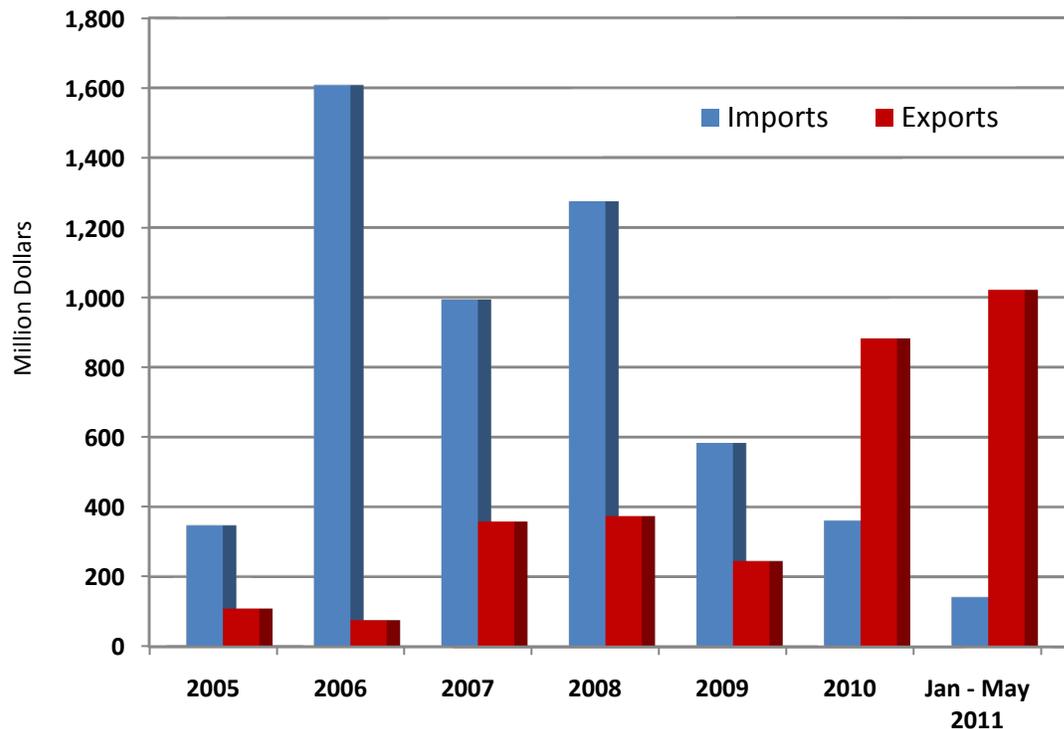
World Ethanol Exports, 2010



Source: National Statistics Compiled by Global Trade Information Services (GTIS)

In 2010, the United States became a net exporter of ethanol for the first time in recent history, generating a trade surplus of \$556 million. 2011 is off to an even more impressive start, with U.S. ethanol exports through May approaching 400 million gallons, valued at more than \$1 billion, surpassing the total for all of 2010. This is three and a half times more than was exported over the same period in 2010, and more than four times what Brazil has exported year-to-date.

U.S. Ethanol Trade Balance, 2005-2011



Source: U.S. Department of Commerce, International Trade Administration

Brazil Struggling with High Sugar Prices

Brazil, the longtime global leader in ethanol exports, has recently been hampered by supply shortages and the high price of sugar. Foreign demand for sugar as a sweetener increased in 2010, leading to a decrease in the availability of sugar for ethanol production; thus, pushing the price of Brazilian sugarcane ethanol higher than the price of U.S. corn-based ethanol. At its peak in April 2011, the price of U.S. ethanol for export was less than half the price of comparable Brazilian ethanol due to Brazilian supply shortages and low stocks at the end of the off-season, prior to the start of the May sugarcane harvest.

In April, Brazilian ethanol prices increased to more than \$6.50 per gallon. With Brazil's ethanol prices surging to new highs in 2010, Brazil began importing ethanol from the United States. Brazil increased its imports in early 2011 as the price spread between the two countries widened. Brazilian imports of U.S. ethanol grew to more than 150 million gallons, valued at more than \$300 million, through April 2011, turning Brazil into a net importer of ethanol. High prices and short supplies led Brazil to pass new legislation lowering the mandatory blending rate from 25 percent to 18 percent and putting ethanol under the purview of the Ministry of Mines and Energy rather than the Ministry of Agriculture.

Looking Forward to the Second Half of 2011

U.S. ethanol production in 2011 will primarily depend on corn and gasoline prices. These prices will dictate how much ethanol will be exported as well as how much discretionary blending will take place above the level mandated by the RFS2. High gasoline prices create a demand for the

discretionary blending of ethanol above RFS2-mandated levels, which call for 12.6 billion gallons in 2011 – 600 million gallons more than 2010. Production through May is 3 percent ahead of last year's pace, which has helped increase stocks by 11 percent and keeps the price of U.S. ethanol below foreign competitors.

Additionally, the United States should remain competitive in the export market due to tight foreign markets and continued demand from Europe. In January 2011, the U.S. Environmental Protection Agency approved an increase in the level of ethanol blended with gasoline from 10 percent to 15 percent for passenger vehicles newer than 2001. This increase effectively increases the U.S. domestic market for ethanol to approximately 17.5 billion gallons. However, the blending of 15 percent ethanol remains on hold while EPA establishes a regulatory program and labeling requirement. It is not clear if EPA will be able to finalize the program prior to the end of 2011.

Despite significantly decreased prices for Brazilian ethanol, the United States should remain competitive. USDA is projecting corn demand for ethanol at 5.15 billion bushels for the 2011/12 marketing year. This translates to nearly 14 billion gallons of ethanol produced in 2011, up from 13.2 billion gallons in 2010. That 13.2 billion gallons of ethanol displaced approximately 445 million barrels of crude oil at an estimated price of \$34 billion, while generating an additional \$825 million in export revenue. 2011 is off to an even better start with more than \$1 billion in ethanol exports through the first five months of the year.

For more about the history of biofuel production in the United States, read [The U.S. Biodiesel Market, 2000 to 2010: Riding the Rollercoaster.](#)

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