



## 2016 Top Markets Report **Renewable Fuels** Country Case Study

### Brazil

The outlook for U.S. fuel ethanol exports to Brazil remains positive in the near term. In recent years, the symbiotic relationship between the two largest ethanol producers in the world has grown stronger, as evidenced by the steady trade in both directions. In recent years, Brazilian consumer demand for U.S. ethanol has been increasing, as U.S. exports have become more competitive in the Northeastern Brazilian market. The overall ranking for ethanol export potential this report has dropped due to the rapid expansion of opportunities in China and India. However, U.S. harvests and production are ample enough to support significant exports to Brazil.

Ethanol Rank

Wood Pellet Rank

4

N/A

The United States and Brazil, the top two ethanol producers and consumers in the world, have a robust trade in ethanol. The trade balance fluctuates depending mostly on weather conditions that affect the harvest of the feedstock. Thus, opportunity windows for price arbitrage between ethanol prices in the United States and Brazil shift the balance one way or the other throughout the year. The international sugar market is also part of the picture, given that the sugar-ethanol industry will divert more or less sugarcane to ethanol depending on sugar prices.

In 2015, the United States exported \$238 million (426 million liters) in ethanol to Brazil, surpassing the imports from Brazil, valued at \$149 million (323

million liters).<sup>i</sup> A record-breaking corn harvest created an abundant supply of ethanol in the United States and contributed to its cost competitiveness. Assuming normal weather conditions, the demand for U.S. corn-based ethanol in Brazil is expected to remain steady, largely due to ethanol needs in the Brazilian Northeast.

At the same time, Brazilian sugar-cane ethanol will retain a presence in the U.S. market because it qualifies as an “advanced biofuel” under EPA’s Renewable Fuel Standard (RFS) regulations. In addition, California and Oregon have implemented their own state-level regulations to promote the use of low carbon intensity biofuels. However, despite the demand created by both federal and state level

**Figure 1: Ethanol Imports from Brazil to the United States** (Denatured and Undenatured Combined)

	2012	2013	2014	2015
Value	\$ 1,285,829,833	\$ 939,624,632	\$ 158,459,638	\$148,606,931
Volume (Liters)	1,736,875,737	1,318,061,827	230,395,535	323,457,185

Source: US Census Trade Data

requirements, imports from Brazil in 2015 as well as the first half of 2016 remained lower than predicted. Brazilian ethanol imports have been declining since 2012 (Figure 1), but Brazil accounted for nearly 92 percent of total ethanol brought into the United States in 2015.<sup>ii</sup>

## Market Overview

Brazil is second only to the United States as the world's top producer of fuel ethanol. Brazil's ethanol is produced from sugarcane, rendering ethanol consumption highly dependent on fluctuations in sugar prices in addition to taxes on gasoline. Additionally, nearly half of the automotive fleet in Brazil is designed to run completely on a certain type of ethanol that can substitute for gasoline, leaving the drivers more likely to make their choice based on economic factors.<sup>iii</sup>

Although Brazil is a major ethanol producer, it is also a significant market for American ethanol exporters. The reasons are twofold: Brazilian consumption of ethanol is extremely high and consumers are price conscious because they can choose their blend at the pump. In particular, demand in Northeast Brazil for imported ethanol has been strong due to insufficient local production and the higher cost of transporting from Southern Brazil.

The Brazilian market for ethanol is still more complex, as ethanol comes in two forms: hydrous and anhydrous, meaning with water and without water, respectively. The type of ethanol that certain automobiles can operate on purely is hydrous ethanol, whereas anhydrous ethanol is blended with gasoline according to government blending requirements. Brazil's current blend rate is 27 percent.

Anhydrous and hydrous ethanols require different processing techniques, so the markets for the two products can diverge. Since hydrous ethanol is a substitute for gasoline, low gasoline prices undercut its competitiveness. However, in that environment, the blending requirements will push up demand for anhydrous ethanol, since it must comprise 27 percent of gasoline sold. Gasoline prices can effectively determine the future of the ethanol industry in Brazil, depending on whether Brazil's policies allow hydrous or anhydrous ethanol to retain a foothold in the market.

Government policy has been damaging to hydrous ethanol. In an effort to control inflation, the Brazilian government kept gasoline prices artificially low, preventing hydrous ethanol producers from having a level playing field and forcing a consolidation of the industry as producers broadly suffer losses.<sup>iv,v</sup> In a market where drivers with flex-fuel cars have the option of filling up with ethanol beyond the 27 percent blend, when ethanol is expensive compared to gasoline, it is less desirable to consumers.

However, in 2015 the Government of Brazil increased taxes on gasoline and made no price adjustment in response to the collapse of international oil prices. This was greeted with relief and optimism by the Brazilian ethanol industry and led to a 36 percent increase in ethanol sales by February 2016.<sup>vi</sup> However, a tax exemption for ethanol sales is anticipated to expire in December.<sup>vii</sup> Such fluctuations in taxation policy complicate the demand/supply situation, making projections for production, use and trade somewhat difficult. Yet in June 2016, the new CEO of Brazil's state-owned oil producer, Petrobras, announced that government subsidies for gasoline would end, paving the way for an increase in ethanol demand as gas prices rise.<sup>viii</sup>

In the long term, if economic conditions are favorable at a time when Brazilian ethanol production rebounds, it also is likely to make its way into California's low emissions fuel market to satisfy its Low Carbon Fuel Standard. Although it may displace U.S. ethanol, its import also may create a gap in Brazilian supply that U.S. ethanol suppliers can easily backfill. That said, there is no immediate evidence that imports of ethanol from Brazil to the United States – whether low or high -- are directly correlated to U.S. export opportunities to Brazil. By the same token, it is difficult to predict whether stimulated Brazilian ethanol production will be used for domestic demand or find its way to the United States.

## Challenges and Barriers

After years of a public tug-of-war over tariffs, trade friction between the ethanol industries in the United States and Brazil is nearly nonexistent. The United States dropped its ethanol tariff for most favored nations at the end of 2011 and eliminated the controversial surcharge. According to a resolution by

the Ministry of Development, Industry and Commerce (MDIC), Brazil's ethanol tariff will remain at zero until December 31, 2021. As a result, two-way trade in ethanol will continue without contentions over tariffs.

Instead, as trade becomes interdependent, the impact of policy issues on both sides of the trade relationship is growing more complex. Further dialogue, including both government and private sector stakeholders, is needed to ensure mutually beneficial trade for this sector.

### **Opportunities for U.S. Companies**

U.S. export opportunities will clearly be affected in years that Brazilian production is bolstered by good sugarcane harvests. For example, sugar prices dropped to around 16 cents per pound in mid-2013, spurring ethanol production; as a result, nearly 60 percent of the country's harvest was converted into ethanol.<sup>ix</sup> In contrast, a period of drought that drastically affects sugarcane harvests leads to high levels of imports from the United States, such as in 2011, when \$1.2 billion worth of U.S. ethanol was shipped to Brazil. Sugar prices are currently at a

four-year high, and sugarcane mills have shifted production from ethanol back to sugar as a result. This is expected to reduce Brazil's domestic ethanol supply in the coming season, creating an opportunity for U.S. exports.<sup>x</sup>

In October 2013, ITA organized a Market Development Cooperator Program in Recife where U.S. ethanol companies met with potential buyers. As a result of the event, U.S. participants strengthened their trade relationships and generated export successes worth reportedly \$30 million. A sizeable Brazilian delegation also attended the National Ethanol Conference in 2016 through the International Buyer Program and is expected to participate again in 2017 (see Addendum). Data for U.S. ethanol exports to Brazil in 2014 and 2015, as well as January-August 2016 data, were noticeably higher than the previous two years. This suggests that the strategy of making personal business connections, rather than relying on sporadic opportunities through distributors, has paid off for the U.S. ethanol industry. The true test that lies ahead will be whether these relationships endure whenever adverse economic or policy situations arise.

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<sup>i</sup> U.S. Census trade data.

<sup>ii</sup> U.S. Census trade data.

<sup>iii</sup> Pearson, Samantha. (2013). Brazil raises fuel prices holds off changes to subsidies. *Financial Times*.

<sup>iv</sup> Ibid.

<sup>v</sup> *Bloomberg New Energy Finance*. (2014, January 13). The US to export ethanol to Brazil. *Biofuel Weekly*.

<sup>vi</sup> *Bloomberg New Energy Finance*. (2016, February 29). Sugar-cane fuel wins in Brazil as cheap ethanol beats gasoline.

<sup>vii</sup> Soto, Alonso and Teixeira, Marcelo. (2016). Exclusive: Brazil to let ethanol tax break expire in December. *Reuters*. Retrieved from: <http://www.reuters.com/article/us-brazil-ethanol-tax-exclusive-idUSKCN1100PB>.

<sup>viii</sup> *Bloomberg New Energy Finance*. (2016, June 13). New CEO of Petrobras has good news for Brazil's ethanol markers.

<sup>ix</sup> Terazono, Emily. (2013). Traders look to Brazilian motorist for sugar's salvation. *Financial Times*.

<sup>x</sup> Strickland, Ryan. (2016). Globalization of ethanol impacts US industry. *Ethanol Producer*.