RFA RENEWABLE FUELS ASSOCIATION

**THE PARADOX OF RISING U.S. ETHANOL EXPORTS: INCREASED MARKET OPPORTUNITIES AT THE EXPENSE OF ENHANCED NATIONAL ENERGY SECURITY?**

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An industry founded in part on its ability to enhance national energy security is being forced to look beyond U.S. borders for new market growth opportunities. For three decades, the U.S. ethanol industry has contributed to a more secure national energy supply by displacing foreign oil with increasing volumes of domestically produced renewable fuel. In 2009 alone, the industry produced 10.75 billion gallons of ethanol, meaning U.S. production accounted for nearly 8 percent of total U.S. gasoline usage. The use of ethanol in 2009 effectively reduced demand for imported crude oil by 364 million barrels.[1]

However, the U.S. ethanol blending market is nearing saturation and demand has hit what is commonly referred to as the "Blend Wall." This demand barrier exists because current federal regulations restrict the amount of ethanol that can be blended with gasoline and consumed in conventional automobiles to 10 percent (E10). As long as this blend wall exists and total gasoline demand remains consistent with recent trends, the domestic market potential for ethanol tops out at approximately 12.5-13.5 billion gallons. Today's industry has the capacity to produce 13.5 billion gallons of ethanol, with another 1.2 billion gallons of capacity under construction.

Fortunately, a recent surge in U.S. ethanol exports is providing the industry with a much needed new source of demand while it awaits EPA's decision on whether to modify existing regulations and allow ethanol blends higher than 10 percent. Ethanol exports have boomed in recent months, with shipments going to dozens of energy-thirsty nations around the globe. The United States has been a net importer of ethanol for the last decade, but the nation is quickly evolving into a net exporter. To provide a clearer picture of the current export situation, the RFA has examined and synthesized data from the U.S. Department of Commerce, U.S. Census Bureau and U.S. Department of Agriculture.

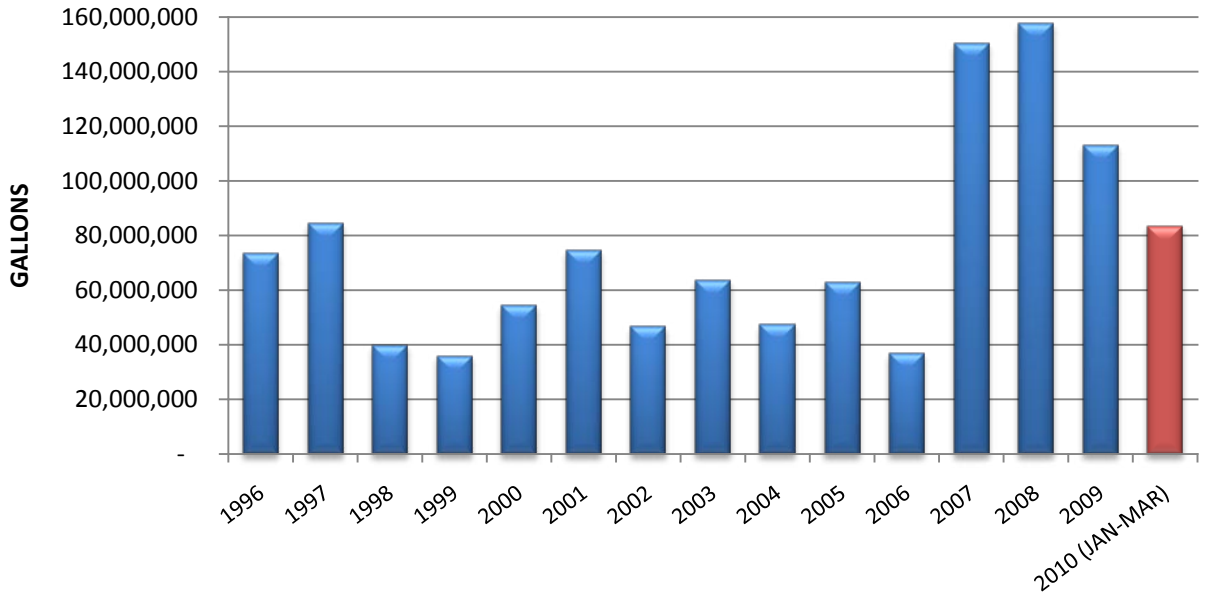
## ON PACE FOR RECORD EXPORTS IN 2010

In the first quarter of 2010, U.S. producers exported 83.5 million gallons of ethanol (denatured and undenatured for non-beverage use[2]), a *nearly five-fold increase* over the first quarter of 2009. In fact, ethanol exports in the first three months of 2010 are already equivalent to 71 percent of the total amount of ethanol exported in 2009. Exports in March established a monthly record at more than 45 million gallons. At the current rate, the U.S. industry is on pace to export more than 330 million gallons of ethanol in 2010, which would be an all-time record. Year-to-date ethanol export volumes and exports for the last 15 years are shown in Figure 1.

[1] John Urbanchuk. Contribution of the Ethanol Industry to the Economy of the United States in 2009. February 2010. http://www.ethanolrfa.org/pages/reports-and-studies#EconomicImpacts

[2] No data is available that expressly reports ethanol exports for fuel use. Here we assume exported denatured ethanol (HTS code 22072000) is used predominantly for fuel. However, exported undenatured ethanol for non-beverage use (HTS code 22071060) may include small amounts of ethanol for industrial chemical use.

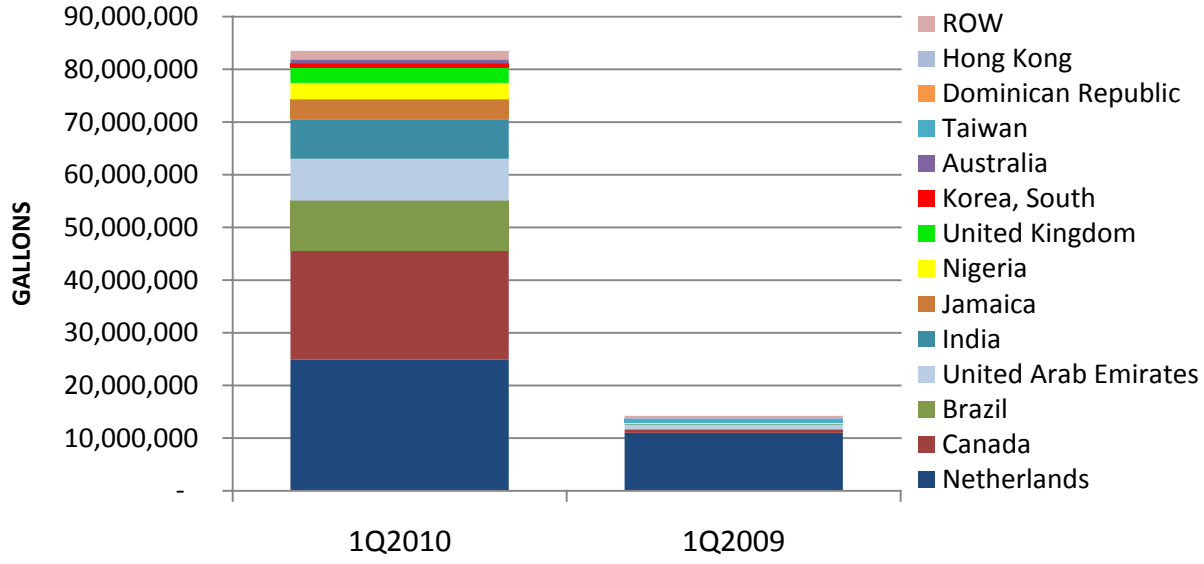
**FIGURE 1. TOTAL U.S. ETHANOL EXPORTS**
**(Denatured & Undenatured, Non-Beverage)**




**Source**: USDA GATS system (based on Dept. of Commerce, U.S. Census Bureau)

In addition to traditional export markets like Canada and the Netherlands, ethanol is now being shipped to a number of countries that have not typically purchased biofuels from U.S. producers. In the first quarter of 2010, sizable shipments were exported to customers as diverse as the OPEC nations of United Arab Emirates and Nigeria. Further, Brazil and India—both typically among the global leaders in ethanol production and exports—imported U.S. ethanol in large quantities. A comparison of ethanol exports from the first quarter of 2010 to the first quarter of 2009 is shown in Figure 2.

**FIGURE 2. U.S. ETHANOL EXPORTS BY DESTINATION, 1Q2010 vs. 1Q2009**

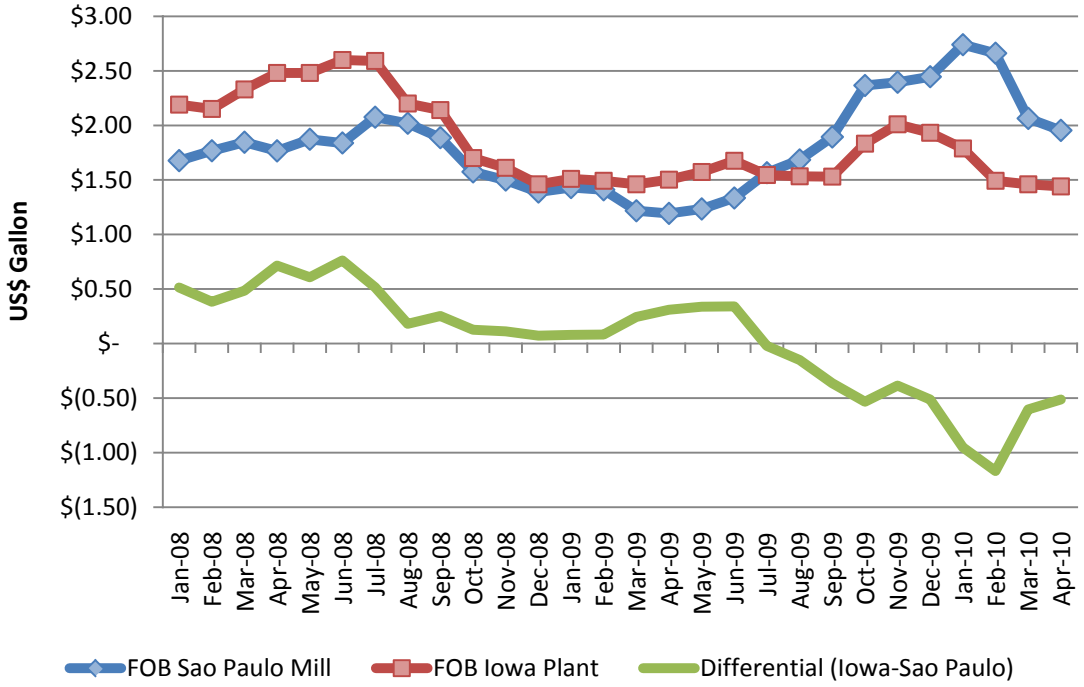



**Source**: USDA GATS system (based on Dept. of Commerce, U.S. Census Bureau)

**WHY ARE U.S. ETHANOL EXPORTS ON THE RISE?**

As shown in Figure 2, countries with very little history of importing U.S. ethanol are currently purchasing large volumes of American product. And countries with long-standing ethanol trade ties to the U.S. are importing even more than usual. Why? It all boils down to simple economics. The United States currently is the world's low-cost producer of ethanol. Due to advancements in ethanol processing technology and the unparalleled productivity of American farmers, U.S. ethanol is currently the most cost-effective alternative fuel on the global market. Figure 3 shows plant-gate prices for both Brazilian and U.S. anhydrous ethanol. While the price differential between ethanol produced in Sao Paulo state, Brazil, and Iowa narrowed to approximately $0.50/gallon in April 2010, it was as wide as $1.17/gallon in February 2010.

**FIGURE 3. ETHANOL PRICES, FOB IOWA PLANT vs. FOB SAO PAULO MILL**




**Sources**: Iowa prices (USDA-AMS); Brazil prices (CEPEA)

Since December 2009, U.S. ethanol has been priced at a discount to gasoline. The differential between ethanol and gasoline at the wholesale level has been as wide as $0.80/gallon in recent months, meaning E10 blends should be $0.08/gallon less than conventional gasoline (before taking into account the ethanol blender's tax credit). U.S. ethanol also has been priced relatively lower than other forms of ethanol, as shown in Figure 3. The current differential means E10 made from U.S. ethanol would be at least $0.11/gallon cheaper than E10 made from Brazilian ethanol at the retail level in the United States (see Figure 4). Given the impact of the blend wall on domestic demand, more U.S. ethanol is available for export than ever before. As demonstrated by the fact that Brazil (normally the world's leading ethanol exporter) *imported* significant quantities of U.S. ethanol in the first quarter, it also stands to reason that key ethanol exporting nations have less product available for export than their customers

are demanding. This explains the increase in U.S. exports to certain countries that normally import Brazilian ethanol.

| FIGURE 4.<br>E10 RETAIL COMPARISON, U.S. (April 2010) | Iowa, U.S. | Sao Paulo, Brazil |
|---|---|---|
| Producer Price (Plant/Mill Gate) | $1.440 | $1.950 |
| Transportation to New York Harbor | $0.120 | $0.190 |
| Ad Valorem@2.5% | - | $0.049 |
| Secondary Tariff | - | $0.540 |
| Vol. Ethanol Excise Tax Credit (VEETC) | $(0.450) | $(0.450) |
| Ethanol Sub-total | $1.110 | $2.279 |
| RBOB Gasoline Spot Price | $2.100 | $2.100 |
| E10 Net Wholesale (90% RBOB/10% Ethanol) | $2.001 | $2.118 |
| Gasoline Marketing, Taxes, Profit, Other | $0.700 | $0.700 |
| **Total E10 Retail Price** | **$2.701** | **$2.818** |

**Sources**: U.S. ethanol price (USDA-AMS); Brazilian ethanol price (CEPEA); RBOB price (OPIS); Gasoline marketing, etc. (EIA)

## THE EMERGING GLOBAL MARKETPLACE FOR U.S. ETHANOL

The recent surge in U.S. ethanol exports demonstrates that a true global marketplace for ethanol is emerging and that supply, demand and price always win out. Much has been made recently of the tax incentives and tariffs used by ethanol producing nations around the world to develop robust domestic biofuels industries. Specifically, nations like Brazil have called domestic incentives for increased local production "barriers to trade." This argument has been waged by the Brazilian industry despite the fact it has historically benefited greatly from various government programs implemented in Brazil and it has exported hundreds of millions of gallons of ethanol all around the world.

As current dynamics indicate, as long as individual nations' biofuels policies remain consistent and predictable, the global market will react accordingly and product will be traded efficiently. What truly disrupts global trade is unpredictable ethanol tax and trade policies that are irregularly adjusted based solely on the current economic health of the domestic industry. Brazil's erratic raising and lowering of both its ethanol blending requirements and import tariffs based on the domestic situation introduces a layer of complexity and volatility to the global trade of ethanol.

## CONCLUSION: THE GOOD NEWS AND THE BAD NEWS ABOUT INCREASED ETHANOL EXPORTS

While the emergence of strong export demand for U.S. ethanol has been a welcome development for the industry, it is somewhat bittersweet. On one hand, strong export demand is creating new market opportunities for U.S. ethanol producers and supporting prices; on the other hand, exports are increasing primarily because existing U.S. regulations prevent the use of more ethanol domestically.

One of the basic tenets upon which the industry was founded some 30 years ago was the ability to reduce reliance on imported crude oil. Ethanol has lived up to that promise. The 12 billion gallons of "renewable fuel" required under the Renewable Fuels Standard in 2010 will displace the need for some 400 million barrels of crude oil that otherwise would have been needed to meet U.S. gasoline demand. The oil import reduction benefits of ethanol would be even greater if regulations allowed the use of blends greater than E10. As stated earlier, U.S. ethanol producers are on course to export approximately 330 million gallons of ethanol in 2010. This is an amount of ethanol that would displace an additional 11 million barrels of imported crude oil if it were allowed to be used in the United States.

As long as domestic ethanol usage is restricted by the regulatory limitation on 10 percent blends, the U.S. ethanol industry will be forced to look to the global marketplace for new demand sources. And, as a result, Americans will miss out on the opportunity for greater fuel savings and a healthier, more secure domestic energy supply.