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## **Running on Empty: U.S. ethanol policies set to reach their illogical conclusion**

*Timothy A. Wise*

I'm as cynical as the next policy wonk, but sometimes even I am surprised at the perverse outcomes of some of those policies. Take the bizarre scenario outlined in the [new agricultural outlook report](#) from the FAO and the OECD regarding the projected rise in ethanol trade – ethanol traded for ethanol – between the United States and Brazil. That's right, 6.3 billion gallons a year sloshing between the world's pre-eminent ethanol producers by 2021. And all in the name of the environment, without a single drop helping people or the planet.

Why would the United States, which now devotes 40% of its corn crop to the production of ethanol, import more than 4 billion gallons of ethanol from Brazil? And why would Brazil at the same time import a projected 2 billion gallons from the U.S.? Couldn't we just save all those transactions costs and shipping-related greenhouse gas emissions by keeping our ethanol and cutting our projected ethanol imports from Brazil in half?

Not if your goal is to game the U.S. biofuel mandate.

The U.S. Renewable Fuel Standard, passed in 2007 and known as RFS2, includes a mandate for 36 billion gallons of renewable fuel use by 2022, with a nested set of mandates for different types of biofuels. Conventional or first-generation biofuels, such as ethanol from corn, have limited environmental benefits, with supposed reductions in greenhouse gas (GHG) emissions of about 20%. Congress wisely set the mandate such that the majority of the 36 billion-gallon mandate should be met by "advanced biofuels" with a GHG score of 50% or better in terms of reductions.

Well, advanced biofuel production in the United States isn't going so well. A small share is expected to come from advanced biodiesel, and that target remains distant but plausible. But the rest is supposed to come from the development of cellulosic ethanol. It turns out that all the R&D money has gone into corn ethanol, greased by the subsidies and incentives Congress lavished to prime that corn-fed pump. No one expects much cellulosic ethanol production anytime soon, though we could be pleasantly surprised. At this point, all we produce is a whole lot of corn ethanol, and we are already nearing the technical limit of 15 billion gallons for non-advanced biofuels.

Fortunately for Brazilian ethanol producers and, indirectly, their U.S. counterparts, the renewable fuel mandate can be met to a significant extent by the use of "other" advanced biofuels. Even though Congress was sold the RFS on the promise of energy independence, those "other biofuels" do not have to be produced in the United States. (In fact, mandating U.S. sourcing could have been subject to a WTO

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challenge.) Brazil's sugarcane-based ethanol is considered advanced, with a GHG-reduction score of 50% despite widespread concerns about a range of other social and environmental impacts.

So by 2021 FAO/OECD researchers project that to meet even somewhat relaxed U.S. RFS2 mandates for total biofuel use and advanced biofuel use the United States will import more than 4 billion gallons of sugar ethanol from Brazil.

Actually, it could be much much more, but the researchers clearly couldn't imagine Congress letting that happen. But they modeled that too, and if current EPA policies are followed and the U.S. does not relax the demands of RFS2 to compensate for low domestic production of cellulosic ethanol, imports from Brazil are projected to be more than 13 billion gallons, almost as much as the U.S. currently produces in corn ethanol.

A third scenario, more perverse than the last but perhaps more likely, is if the EPA decides to allow U.S. corn ethanol to fill the gap left by the cellulosic shortfall, in spite of its limited environmental benefits and its high social costs in terms of food prices. The FAO-OECD model on that one projects a 35% rise in corn demand and a whopping 16% increase in global corn prices.

But the ultimate perversity is the ethanol-for-ethanol trade between the U.S. and Brazil. Under the FAO-OECD's baseline scenario, Brazil would import 2 billion gallons of corn ethanol from the United States. Why, if it's a major ethanol exporter and it produces more environmentally sustainable ethanol? To make up for the domestic shortfall created by its exports to the U.S., and to meet its own rising demand from its expanding fleet of flex-fuel cars. They'll take our low-grade corn ethanol if they can get a higher price for their sugar-based equivalent.

Talk about perverse. It's bad enough that we meet our environmental goals not through good old American know-how but by buying it from someone else. Then we turn around and sell them an environmentally inferior equivalent at a cheaper price.

In the process, another round in the food-fuel fight will be won by the fuels, with ethanol demand continuing to put upward pressure on corn prices globally. The FAO-OECD report contains strong warnings on biofuels' impacts on food prices, and it went to press even before drought parched the U.S. corn belt. They projected stable or slightly declining prices in 2012 and forward. Instead, corn and soybean prices are hitting historic highs and the world is staring down the loaded barrels of the third major spike in commodities prices in the last five years.

Unfortunately, the powers that be seem to have learned nothing from the first two. They certainly haven't learned that it's still a bad idea to put food in our cars.

*For more, see Wise's coauthored report, ["Resolving the Food Crisis,"](#) and his report for ActionAid, ["Biofueling Hunger."](#)*