

A FEW NOTES ON BIOFUELS

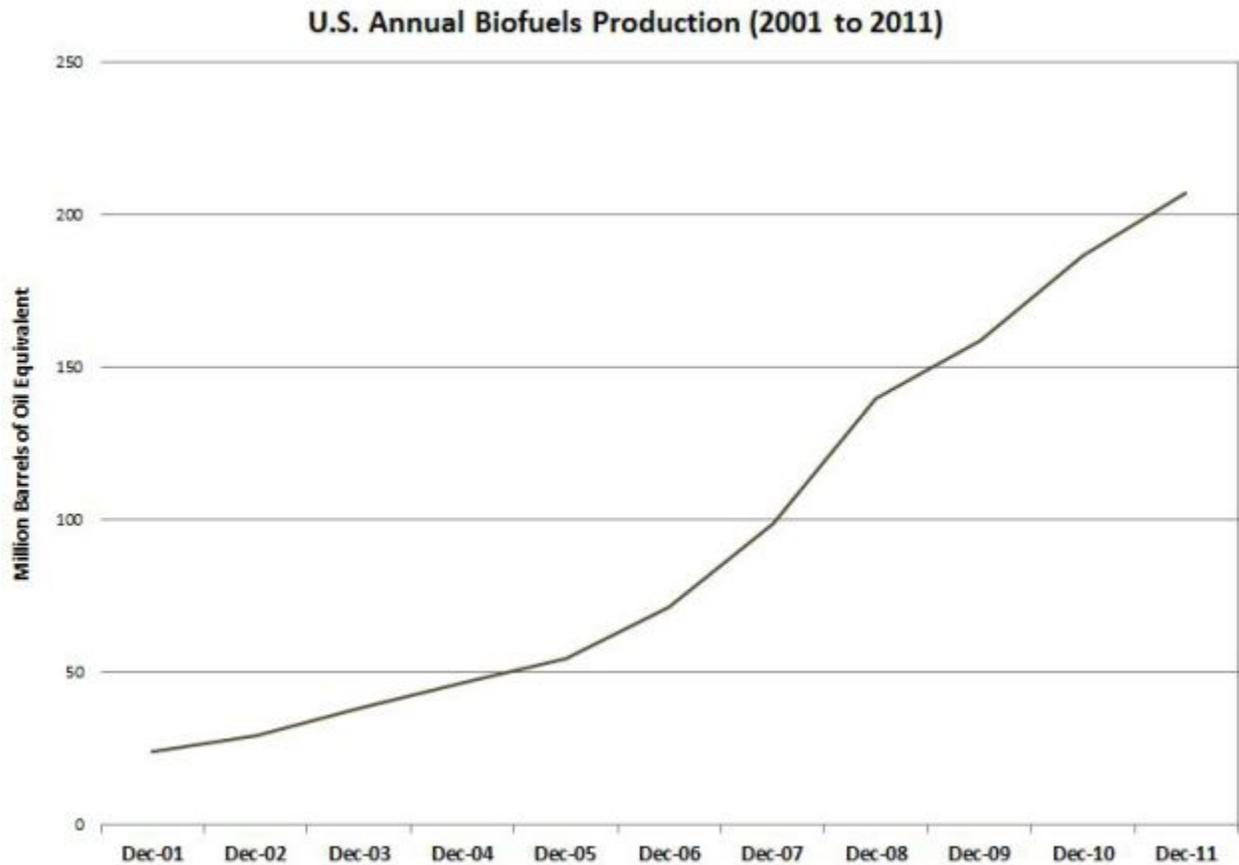
The use of biofuels is a controversial subject these days due the combination of food inflation and growing energy needs. The 2008 Farm Bill, which expires in June, 2013, contains subsidies for the ethanol industry as the U.S. government looks to decrease carbon dioxide emissions and encourage the use of renewable energy in light of rising fuel costs. Due to rising food prices, caused in part by the use of corn-based ethanol, the 2008 Farm Bill emphasized the use of “advanced ethanol” or ethanol created from non-corn based feedstocks, while de-emphasizing/reducing subsidies for corn based feedstocks.

Cellulosic ethanol, or ethanol which doesn't use the food portion of plants, was popular in the 2008 Farm Bill, because it doesn't have as large of an effect on food prices, it has shown the ability to grow on sub-standard farm land, and it needs very little maintenance (water/fertilizer/pesticide). I would assume its main effect on food prices is that it will take up a certain amount of land that would otherwise be used to grow food. Cellulosic ethanol is derived from prairie grasses (switchgrass), hybride poplar and willow trees, and biomass waste.

A House Committee recently passed a \$500 billion farm and nutrition bill, but the House appears to have little desire to take this bill up anytime soon. The Energy Policy Act of 2005 created the Renewable Fuels Standard, which capped production of corn-based ethanol feedstocks at 15 billion gallons per year, with advanced biofuels expected to fuel the balance of a 36 billion gallon biofuels mandate by 2022. It will be interesting to see how the finalized bill supports the different types of ethanol feedstocks, as advanced and cellulosic ethanol production has failed to meet expectations after the 2008 bill due to issues with commerciality. What does this mean? In order for the government's biofuels goals to be reached, we are going to need to use more corn which will increase food prices.

The U.S., who is the global leader in biofuels production, is clearly pushing to make them a significant component of its future energy needs. Biofuels production has increased 7.5x during the past decade to 207 million barrels (8.7 billion gallons) in 2011 (see graph below). The U.S. Navy is onboard with the idea, with plans to allocate \$170 million of the \$420 million government budget to build refineries capable of producing ten million gallons of biofuel annually to fuel navy jets and ships. Continental Airlines became the first U.S. passenger plane company to use biofuels in November, 2011, when it flew a flight powered by a jet fuel blend of conventional fuel and biofuels

(algae and plant waste). Air Canada is currently testing biofuels in flights (that's how some of its Olympic athletes got to the London games), claiming its blend will reduce emissions by 40%.



Source: BP Statistical Review of World Energy 2012

The next step with my blog with respect to biofuels is a price per gallon comparison with gasoline. That piece will hopefully give us a little more perspective on the cost differences between not only biofuels and gasoline, but corn-based ethanol versus say cellulosic-based ethanol. The government doesn't want to use corn, and for good reason, but that appears to be the only source of biofuel that is commercially viable at this point.

Ps:

Do biofuels really decrease carbon dioxide emissions? Several scientists think we may be double counting certain emissions reductions. There is also belief that ethanol is corrosive by nature which could hurt engine durability.

Pps:

The summer Olympics has quite the advantage over winter with respect to number of sports categories. We got table tennis for the summer, why no air hockey for winter?

Source : <http://theenergyharbinger.com/2012/07/31/a-few-notes-on-biofuels/>