How the Renewable Fuel Standard Affects Agriculture and Consumers

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In 1981 we produced 250 million gallons of ethanol for fuel use in the United States. Last year we produced 13.2 billion gallons of ethanol for fuel use. We have seen dramatic growth in this industry throughout that period and I have been involved in it since its inception. For the past several years oil prices have been relatively stable at between $95 and $110 a barrel. As a result, the economic environment for biofuels remains relatively strong.

There are two primary biofuels: ethanol which is an alcohol fuel we blend into gasoline and biodiesel. Biodiesel is a product made from lipids in the transesterfication process. I will talk about ethanol. When the first internal combustion engine was invented, it was designed to run on alcohol. Of course, when the oil industry blossomed in the early 1900s making gasoline available at affordable prices, that pushed production of biofuels aside.

Ethanol prices are somewhat lower than gasoline prices but follow the same price trend. When oil companies say they cannot make money blending ethanol into gasoline, they are blowing smoke. Ethanol is cheaper and it cleans the emissions, making the fuel less polluting. The renewable fuel standard is the primary U.S. policy for incorporating renewables like ethanol into our fuel mix. The law says that by 2022 the U.S. will use 36 billion gallons of renewable in the U.S. fuel supply. Today we are producing roughly 15 billion gallons of ethanol per year. The amount of ethanol that can be made from corn is capped at 15 billion gallons because of fears that if we use more than that amount of corn, it will adversely impact livestock producers and consumers. That is a baloney argument. The area of growth for ethanol feedstocks is supposed to be cellulose such as we get from grass or wood but there are problems with that technology at present. Biodiesel is also slated to grow over time but it is more of a niche fuel serving buses, fleets of vehicles and over the road tractor trailers. By comparison it is a relatively small market.

The tax credits for production of ethanol from cellulose and biodiesel expired at the end of 2013 but there is strong political support for reinstating them and making them retroactive. I expect that will happen some time in 2014. Every year the Environmental Protection Agency must publish a report on compliance with the renewable fuel standard. This is called the renewable volume obligation (RVO). When the next RVO is published it is expected that there will be reductions is requirements for all renewable fuels. Cellulosic ethanol requirements will be reduced from 1.75 billion gallons per year to 17 million gallons because we are not making much of this type of ethanol because the technology is still uncertain. The biodiesel requirement is expected to increase to 1.28 billion gallons and the corn ethanol requirement is expected to decrease from 18.2 billion gallons to 15.2 billion gallons.

New ethanol plants that come on stream must meet higher standards for elimination of greenhouse gases. These are determined by lifecycle analyses conducted by EPS and there is a backlog these analyses. This has slowed the introduction of new plants into the system. We have seen an improvement in ethanol profitability. One of the reasons is that feedstock costs have dropped dramatically in part due to the record corn crop last year.

Ethanol has hit what is called the blend wall. That is because ethanol is approved for a ten percent blend with gasoline. Virtually all the gasoline in the U.S. consists of 10 percent ethanol. However, gasoline consumption by the driving public has been declining since 2006 for a number of reasons. It is expected to continue declining through 2022. Therefore if more ethanol is to be utilized, it needs to be incorporated in blends in which it comprises higher concentrations. Since ethanol is mandated at 10 percent and less fuel is being used, those two factors combine to produce the blend wall. About a year and a half ago, EPA approved the use of 15 percent ethanol in vehicles manufactured since 2001. That is about 70 percent of all the vehicles on the road today. But even that blend will not use up enough ethanol to comply with the total amount (36 billion gallons) required in the renewable fuel standard. For that to happen, the blend would have to go up to 26 percent. Few people expect that to happen. There are only 59 gas stations in the U.S. that dispense E15 (15 percent ethanol).

One reason higher blends are not being used is fear on the part of consumers that higher concentrations of ethanol will hurt their engines. Because ethanol burns hotter and cleaner, use of higher blends requires some changes to the carburetion in cars. There is also concern about using ethanol blends in small engines. Much of the concern about engine harm is misplaced. If one goes to Brazil, one will find two types of engines: ones that run on 100 percent ethanol and ones that run on 85 percent.

There is very little empirical evidence that suggests using corn to produce ethanol has led to higher food prices. For instance, the data show that the reason livestock prices have risen is drought and other extreme weather. Almost all the opposition to ethanol use in the U.S. comes from the American Petroleum Institute which represents the oil companies. And the reason big oil opposes using it is that ethanol has substantially reduced the market share they once enjoyed. Expanding biofuels production typically has positive economic impacts. It expands demand for crops, puts money in farmers’ pockets and reinvigorates local economies where plants are located. An ethanol plant producing 70 million gallons of ethanol per year generates on average 70 direct jobs and 480 additional jobs in other sectors, adding up to $37 million in household income. I expect biofuels production to expand both in the U.S. and globally. And it will not hurt consumers as it does so.