

March 19, 2006

**Gasoline Market Jitters**

During the last week, gasoline prices on the NYMEX futures market have spiked up substantially. Is there a real potential for a shortage or are the market fears overblown? Here is some information that should help put the market in perspective.

**How much gasoline do we use and what type of gasoline is it?**

According to the DOE/EIA, 2005 gasoline consumption in the United States was as follows:

Total Gasoline consumption: 9.125 MMB/D (million barrels per day)

Of which:

Conventional Gasoline 6.041 MMB/D

Reformulated Gasoline (RFG) 3.085 MMB/D

**What's the difference between Conventional and RFG?**

Conventional gasoline meets the basic specifications for gasoline use around the country. It may contain alcohols such as ethanol or ethers such as MTBE. Sometimes it contains ethanol, it generally does not contain MTBE.

RFG is a specialized grade of gasoline which is required by law in certain parts of the country, mainly major metropolitan areas, to help reduce pollution. It had to contain a minimum amount of oxygen. That oxygen was supplied by alcohols or ethers, again ethanol or MTBE.

So of the 3 MMB/D RFG that refiners produced, about 2 MMB/D contained ethanol and about 1 MMB/D contained MTBE.

**What has Changed?**

In August of 2005, the Energy Policy Act of 2005 was enacted. What didn't it do? It did NOT shield refiners from liability of using MTBE which had been found contaminating drinking water. It also did NOT ban the use of MTBE nationwide. Many states have enacted MTBE bans, but there is no federal ban.

The act did something else—it no longer required the use of oxygen in RFG blends effective 270 days after the law was enacted. So come May 2006, the use of ethanol or MTBE for RFG blending is no longer mandatory, it will be optional. For most refiners the course of action was clear: phase out MTBE from their gasoline by May 2006.

**Why continue to use ethanol if oxygen content is optional?**

When the consumer pulls up to a gasoline station, the biggest decision is what octane grade to buy. Regular, midgrade or premium. That is the least of the refiners' problems. Remember RFG is sold in metropolitan areas to help reduce pollution. Gasoline containing oxygen helps refiners do that more economically than producing a clean burning gasoline that does not contain oxygen. Therefore, if a refiner takes MTBE out of his RFG, he is now going to produce RFG containing ethanol so that he can meet the reduction in pollution contaminants.

The Energy Policy Act of 2005 did something else. Under its Renewable Fuels Program, the Act requires that 2.78% of the gas sold in 2006 to be renewable fuel. This corresponds to about 4.0 billion gallons of ethanol.

Not only do refiners need ethanol to make the RFG specifications, the government is mandating a certain amount of renewable fuel usage the majority of which is ethanol in gasoline.

**Is there enough ethanol?**

The use of 4.0 billion gallons per year of ethanol in 2006 equates to about 261 MB/D (thousand barrels per day). According to the DOE/EIA:

Annual 2005 Ethanol Production in the USA was 255 MB/D (3.9 billion gal/yr)

Annual 2005 Ethanol Imports into the USA were 7 MB/D

December 2005 Ethanol Production was 280 MB/D

According to the Renewable Fuels Association:

Ethanol Production Capacity in the USA March 2006 287 MB/D (4.4 billion gal/yr)

33 Plants under construction add another 117 MB/D (1.8 billion gal/yr)

Clearly there is enough ethanol capacity to meet the renewable fuels mandate, but is there enough ethanol to blend into the gasoline pool?

Here is a different look at the numbers:

Refiners produced 2 MMB/D of RFG with ethanol last year. That's estimated at about 130 MB/D ethanol. But we forgot to mention something. Of the 6 MMB/D conventional gasoline that refiners produced, 1.3 MMB/D contained 10% ethanol. That's another 130 MB/D. In May, refiners plan to replace the MTBE in 1 MMB/D RFG with ethanol. That's an additional 100-150 MB/D. The total ethanol demand beginning mid year 2006 could reach 400-410 MB/D.

But the ethanol production capacity will only reach about 400MBD (the 287MB/D currently available plus the 117 MB/D under construction) by the end of December 2006. Where does that leave us this summer? Imports will fill some of the gap. But the balance between ethanol supply and demand is really quite tight.!!!

### **Logistics Issues**

There is a big difference between getting RFG with MTBE to the consumer and getting RFG with ethanol to the consumer. RFG with MTBE was blended at the refinery, shipped via pipeline to a terminal, and then loaded into a truck for delivery to the local service station.

Not so with ethanol. Ethanol can NOT be blended at the refinery. Ethanol has a great affinity for water. Any water in the distribution system attracts ethanol out of the gasoline and into the water. Ethanol must be transported via railcar or tank truck to a terminal where it is blended with gasoline for ultimate sale to the consumer. Meanwhile at the refinery, the refiner makes a gasoline basestock which is shipped to the terminal for blending with ethanol. This basestock is known as RBOB—Regular gasoline Blendstock for Oxygenate Blending.

### **What will Refiners Do?**

Refiners have several choices. They can revisit their company policy phasing out MTBE use and decide to use it in select regions of the country. That would reduce their ethanol demand for RFG. Refiners could also reduce the blending of ethanol into conventional gasoline and make up the volume with additional quantities of conventional gasoline without ethanol. This frees up ethanol for the RFG pool as well. Lastly, refiners could produce RFG with no oxygen content at all. This is feasible, but expensive.

Some of the rally on the NYMEX last week was a realization that the cheapest source of RFG in the country was from buying the NYMEX contract and then taking delivery. The RBOB contract (see below) had been trading as much as 20 cpg (cents per gallon) higher than the RFG contract during the summer months giving refiners great incentive to produce RBOB at the expense of RFG. Last week, that differential narrowed to 10-15 cpg.

### **Ethanol Use Ramifications for the NYMEX**

With gasoline inventories near seven year highs and adequate ethanol production capacity, the market is clearly nervous. The NYMEX has listed two gasoline contracts—the RFG contract which has been around for years, and the new RBOB contract. Although growing the RBOB contract still has little liquidity, and most of the action is still taking place in the RFG contract.

RFG demand will decrease this summer, while RBOB demand increases. The problem with RBOB is the logistics of getting the ethanol from the producers to the terminals. Over 97% of the ethanol production in the USA is located in the Midwest. It must be railed or trucked around the country or possibly barged down the Mississippi River. This becomes a logistical nightmare. With railroads running at near capacity with coal shipments, grain shipments and manufactured good, ethanol shipments must compete with the existing business.

Take the Dallas Fort Worth Metro area. The area had been supplied with RFG containing MTBE predominantly shipped via pipeline from the gulf coast. Now, the gulf coast refiners will produce RBOB and depend on railcar and tank truck shipments for the ethanol supply. Repeat this scenario throughout the major metropolitan areas.

### **What else has changed?**

In 2006, lower sulfur standard came into effect for refiners and importers. The rules for these new standards were announced in 1999 by President Clinton and enacted in 2000. The require refiners to average 30 ppm (parts per million) sulfur in their gasoline, down from 90 ppm in 2005. To meet the new regulations, refiners invested billions of dollars in new processing units—desulfurizers or hydrotreating units, as well as other auxiliary processing units to support these functions. Therefore there are now more “links in the chain” to produce the final finished product for the consumer. More links means more potential for processing unit upsets or disruptions.

These processes also result in lower octanes of the materials being desulfurized, which will in turn tighten premium gasoline supply as some amount of premium gasoline is now used to make up for the loss of octane.

### **Why the Jitters?**

The market clearly has many things on its mind. The changeover to ethanol is a worry both from a supply and logistics standpoint. Many market participants don't quite yet understand what the RBOB contract means. New sulfur specifications result in a greater probability of supply interruptions. We are currently in the height of the refinery maintenance season which is constraining supply. Ongoing crude supply issues in Nigeria, coupled with the geopolitical concerns in Iran and Iraq and added to rhetoric out of Venezuela give a volatile mix. Will the hurricane season be a repeat of 2005?

These issues all weight heavily on the traders minds going into the gasoline driving season. They give traders many reasons to buy, and few reasons to sell. High inventories and record levels of imports are facts that the market seems to acknowledge but are not enough to comfort the market at the moment.