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Gasoline Blending 101: The Ethanol Blending Requirement

Posted by Robert Rapier on July 28, 2008 - 10:00am
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I have seen the question frequently arise as to whether the ethanol blending mandate is based on rigid numbers (e.g., 9 billion gallons in 2008) or whether it is actually a percentage requirement, and the number is an estimate based on projected gasoline sales. In other words, let's say that hypothetically gasoline sales this year are only half the level of last year. Is the mandate still for 9 billion gallons, or does it drop to 4.5 billion gallons?

Also, a claim was recently made here that refiners are underblending ethanol this year, and are likely to end the year in violation of the mandate. So, I also sought some clarification around this issue. I contacted Peter Gross at the EIA, who seemed to be their expert in this area. He was kind enough to reply, and clarified both issues:

> 9 billion gallons (and future levels) are mandated and not based on projected total gasoline sales. The scenario you mention of gasoline sales falling way off (10% at most maybe from last year), would still put the total motor gasoline consumption at more than 130 billion gallons (which includes the 9 billion gallons of ethanol) for the year. Thus, there is plenty of gasoline around even in this extreme case to absorb the ethanol and still not saturate the E10 market. In fact, 9 billion gallons of ethanol means 90 billion gallons of E10 which leaves over 40 billion gallons of conventional gasoline without ethanol.
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> The immediate problem is not that there will be enough gasoline to absorb the ethanol in 2008, 2009, and probably 2010; in these years the questions are "Is there enough infrastructure to send the ethanol to (and blend with gasoline in) as-of-yet untapped regions, esp. the southeast?" or "Will mounting political pressure over food/grain costs force the EPA to lower the mandate?" (witness Texas's recent waiver application).
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> After 2011 EIA projects there will not be enough gasoline sold to absorb the ethanol as E10; then the big question becomes how does the U.S. absorb the excess; as E85? (currently the only legal option) or as E15/E20? (as of yet not fully tested). Can the EPA lower the mandate if the E85 infrastructure is inadequate or too costly and the E15/E20 option is not available? Yes, but again this probably would not happen until after the "blend wall" (i.e., saturated E10 market) has occurred.
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> All obligated parties (refiners and importers of refined fuel products) must satisfy their "renewable volume obligation" (RVO) which is essentially their share (based on how much fuel they produce or import) of the total renewable fuel that must be used (this year 9.0 billion gallons). Volumes of blended renewable fuel are assigned RINs

(renewable identification numbers). If a particular party cannot blend their share, they may buy these RINs from parties that have over complied on their RVO (though some alternatives exist such as carrying a RIN deficit for one year or using one's own excess RINs from the previous year). In any case, every year every obligated party is required to document its RINs and show that they have the same or more than their RVO to the EPA. If they don't, they can carry a deficit as mentioned earlier or they will be penalized by the EPA.

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To summarize, the ethanol mandate is based on a fixed number. This means that even as gasoline demand softens, demand for ethanol will not - unless the mandate is rolled back. Even if gasoline demand continues to fall, the ethanol mandate escalates from 9 billion gallons this year to 10.5 billion gallons next year to 12 billion gallons in 2011. This is interesting because right now you can buy a contract for January 2011 delivery for less than you can buy an August 2008 contract. Traders must believe that enough new ethanol capacity will come online to meet the additional mandated demand. (Note: I have learned that ethanol contracts are hard to buy and sell, so there is an added element of risk if you buy a contract.)

Further, refiners can technically underblend, but they must make up for it by either buying credits from parties who overblend, or by carrying a deficit that they have to make up - or suffer penalties. Thus, they can underblend and not be in violation of the mandate, because there are provisions for that. If they don't meet those provisions, they are in violation and are penalized.