



The Secretary of Energy
Washington, DC 20585

February 3, 2006

The Honorable Stephen L. Johnson
Administrator
Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Dear Administrator Johnson:

Section 1501 of the Energy Policy Act of 2005 (EPACT 2005), requires that the Department of Energy (DOE) conduct for the Administrator of the Environmental Protection Agency (EPA) a study assessing whether the renewable fuel program (RFP) will likely result in significant adverse impacts on consumers in 2006 on a national, regional, or State basis. EPACT 2005 stipulates that the study shall evaluate renewable fuel supplies and prices, blendstock supplies, and supply and distribution system capabilities. Based on the results of the study, the DOE is required to make specific recommendations to the EPA about whether a waiver of the 2006 RFP is warranted. EPACT 2005 specifies that the study is due to EPA by February 4, 2006.

Based on our assessment of the supply of renewable fuels, blendstock supplies, and supply and distribution system capability, the DOE does not believe that the RFP will have adverse impacts on consumers in 2006 on a national, regional or State basis. Therefore, the DOE does not recommend, in whole or in part, a waiver of the RFP requirements for 2006. However, even though the DOE does not believe that the RFP will have adverse effects, other market factors could. For reasons discussed in the enclosure, the expected phase-out of MTBE may increase the likelihood of higher prices and a possibly volatile market through 2006. If these circumstances occur, they should be attributed to the phase-out of MTBE and not the requirements of the RFP.

Please find enclosed our study that summarizes DOE's findings, and explains why DOE does not believe that the RFP will have any adverse impact on consumers in 2006 on a national, regional or State basis.

Sincerely,

Samuel W. Bodman

Enclosure



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**ASSESSMENT OF THE NEED TO WAIVE
IN WHOLE OR IN PART
THE RENEWABLE FUEL PROGRAM IN 2006**

**As Required by Section 1501
of the
Energy Policy Act of 2005**

U.S. Department of Energy

January 31, 2006

Background and Recommendation

The Energy Policy Act of 2005 (EPACT 2005) requires the Department of Energy (DOE) to conduct for the Administrator of the Environmental Protection Agency (EPA) a study assessing whether the renewable fuel program (RFP) as specified in section 1501 of EPACT 2005 will likely result in significant adverse impacts on consumers in 2006 on a national, regional, or State basis. EPACT 2005 stipulates that the study shall evaluate renewable fuel supplies and prices; blendstock supplies; and supply and distribution system capabilities. Based on the results of the study, DOE is required to make specific recommendations to the EPA about whether a waiver of the 2006 RFP is warranted.

DOE expects that 2006 renewable fuel use will be in excess of that required by the RFP. Ethanol use has grown substantially during 2004 and 2005 because: ethanol was used to fulfill the reformulated gasoline (RFG) oxygenate requirement in States that have banned the oxygenate MTBE; higher crude and petroleum prices; and, limited domestic refining capacity. As a result, ethanol has become more economically competitive as a gasoline blending component even outside the traditional Midwestern markets in which ethanol has been splash blended. Also, the ethanol industry has anticipated enactment of the RFP and has already expanded ethanol production capacity to meet the RFP requirements. Therefore, DOE believes that domestic renewable fuel production capacity is in place to satisfy the requirements of the RFP for 2006.

Based on our assessment of the supply of renewable fuels, blendstock supplies, and supply and distribution system capability, DOE does not believe that the RFP will have any significant adverse impacts on consumers in 2006 on a national, regional or State basis. *Therefore, the DOE does not recommend, in whole or in part, a waiver of the RFP requirements for 2006.* However, even though the DOE does not believe that the RFP alone will have significant adverse impacts on consumers of motor fuels, other market factors could adversely affect consumers.

Gasoline suppliers are moving forward with plans to phase-out use of MTBE in 2006. The suppliers believe the removal of the Federal oxygenate requirement could increase their potential liability if water supplies are contaminated with MTBE. This rapid phase-

out of MTBE will reduce gasoline supplies and may increase the likelihood of higher prices and a possibly volatile market through 2006. Ethanol is one component that will help replace MTBE volume and it is expected that increased demand for ethanol could surpass the volumes that can be supplied by the domestic ethanol industry for a portion of 2006. If these circumstances occur, they likely will result from the phase-out of MTBE and not the requirements of the RFP.

Renewable Fuel Supply

For 2006 the EPA is adopting the default standard for renewable fuel as required in EPACT 2005. EPACT 2005 directs EPA to issue regulations by August 8, 2006, and provides that, if EPA has not adopted such regulations by that date, then 2.78 percent of the gasoline sold or dispensed to consumers for calendar year 2006 must be renewable fuel. Since EPA did not believe it could promulgate RFP regulations before August 2006, EPA has finalized regulations for 2006 that interprets and clarifies the statutory default provision of 2.78 percent so it can be implemented as intended for 2006. In 2006, demand for gasoline is expected to be approximately 142.4 billion gallons¹, which results in a renewable fuels requirement of approximately 3.96 billion gallons.

Renewable fuels are defined in EPACT 2005 on the basis of the feedstock that must be produced from plant or animal products or wastes. Ethanol and biodiesel are the renewable fuels that will likely be used to fulfill RFP requirements. Even though default renewable and annual standards are expressed in the statute in terms of percent renewable fuel in gasoline, EPA has interpreted biodiesel as renewable fuel that can be used towards the RFP requirements even though biodiesel is not used in gasoline.

Collective Renewable Fuel Use and the Default Standard

EPA has interpreted the default provision for 2006 as imposing a collective obligation on the regulated parties. Consequently, if the average volume percentage of renewable fuel used in 2006 meets or exceeds 2.78 percent, then the standard is satisfied for all responsible parties, regardless of their individual efforts towards that goal.

In the unlikely event that renewable fuel use in 2006 falls below the default standard, EPA will add to the industry's 2007 renewable fuel requirements any deficit incurred in 2006. This deficit carryover provision is similar in concept to the provisions of the credit and trading program that will be established in accordance with EPACT 2005. Deficit carryover will allow individuals that cannot satisfy their renewable fuel obligation in a given year to fulfill a deficit in a subsequent year. EPA's forthcoming regulations will clarify exactly how this program will work. While EPA has included a deficit carryover provision to address the possibility of a failure to meet the default standard in 2006, DOE believes that this provision will not have to be used.

¹ EIA Short Term Energy Outlook, January 2006.

Domestic ethanol capacity is currently about 4.4 billion gallons per year² and domestic biodiesel production capacity is over 200 million gallons per year³. In anticipation of the RFP, the domestic ethanol industry is undergoing expansion and has announced approximately 1.5 billion gallons of planned new capacity. In addition, approximately 150 million gallons of year of ethanol were imported in 2004 and, during the months of October and November of 2005, imports have averaged approximately 650 thousand gallons or over 325 million gallons if extrapolated annually.

DOE believes that domestic renewable fuel supply capability will approach 5.0 billion gallons for 2006 - well in excess of the RFP requirements for 2006. With the likelihood that, due to the expected MTBE phase-out, ethanol demand could be well in excess of domestic supply in 2006, it is anticipated the domestic ethanol prices will continue to attract imports of ethanol. However, it is unclear how high ethanol prices will need to rise in order to attract substantial volumes of additional supply. Much of the world's excess ethanol capacity is produced from sugar, which is also currently commanding higher prices and therefore increasing the cost of ethanol imports. Regardless, it should be emphasized, that even without ethanol imports, domestic ethanol production is expected to comfortably exceed 2006 RFP requirements.

Biodiesel can also be used to meet the requirements of the RFP. With the incentives provided in EPACT 2005 and some State mandates such as Minnesota's 2 percent biodiesel requirement, demand is expected to increase during 2006. EIA estimates that biodiesel demand in the U.S will be over 80 billion gallons in 2006, up from 46.5 million gallons in 2005⁴.

Table 1
Domestic Ethanol Supply and Expansion Capacity
(billion gallons)

	2005	Mid-2006
Ethanol Capacity	3.8	4.4
Expansion	0.6	0.4
Total	4.4	4.8

MTBE Phase-Out

The refinery industry is expected to phase out the use of MTBE during 2006 for the reasons discussed above. If all MTBE is to be replaced with ethanol, an additional 130 thousand barrels per day of ethanol would be required in the first and second quarter of 2006. If this additional demand is placed on top of today's approximately 265 thousand barrels per day ethanol use, 395 thousand barrels per day (6.1 billion annual gallons) of ethanol would be required. It does not appear that the domestic ethanol industry will be able to supply this volume of ethanol in 2006 and it is also unclear if ethanol imports

² DOE's assessment of ethanol production capacity as reported by the Renewable Fuels Association.

³ EIA's assessment of biodiesel production capacity in support of AEO 2006.

⁴ EIA, AEO 2006.

would be available to fully replace MTBE. Also, to replace MTBE with ethanol during the first and second quarter 2006, a significant expansion of transportation and storage infrastructure capacity will be needed to move ethanol from the Midwest to RFG markets during the first half of 2006. The East Coast RFG market would require an additional 90 thousand barrels per day (1.4 billion annual gallons) or 2.5 times the quantity of ethanol that was moved to the East Coast in 2005. Both capacity and transportation issues imply a very tight ethanol market for at least the first half of 2006.

State Renewable Fuels Mandates

A number of States (Minnesota, Montana, and Hawaii) have instituted ethanol and/or biodiesel use requirements increasing the demand for these renewable fuels even if they are not economically competitive. Montana and Hawaii's ethanol mandates are new for 2006. Montana's ethanol requirement will not be in effect until ethanol production capacity within the state reaches 40 million gallons and demonstrates this capability for three months. Currently, there are no ethanol plants in Montana. Hawaii's ethanol requirement (10 percent ethanol gasoline blends) is effective April 2, 2006, however, the requirement can be waived if competitively-priced ethanol is not available to meet the minimum requirements or compliance would cause undue hardship. Minnesota's biodiesel mandate (2 percent of on-road diesel fuel must be biodiesel) went into effect on January 1, 2006. However, due to biodiesel quality issues, the mandate has been waived until February 10, 2006. It is expected that Minnesota biodiesel requirement will increase demand by 16 million gallons per year.

Crude and Gasoline Prices

With the price increases of crude oil over the past two years and continued strong demand for motor fuels, tightened product specifications, and EPACT 2005 incentives for biodiesel, both ethanol and biodiesel have become more economically attractive to fuel producers as gasoline and diesel blending components.

A number of product specification changes occur for both gasoline and diesel in 2006. The final phase of the gasoline sulfur programs (30 ppm S average, 80 ppm S max) take effect in 2006. Also, EPACT 2005 makes adjustments to gasoline by removing the Federal reformulated gasoline oxygenate requirement and eliminating the North and South volatile organic compound (VOC) emissions distinctions for reformulated gasoline. The Federal oxygenate requirement for reformulated gasoline is expected to be eliminated in the first quarter of 2006 as required by the EPACT 2005. MTBE and ethanol are the primary oxygenates used to fulfill the oxygenate requirement. Elimination of the oxygenate requirement might have had the effect to reduce the demand for ethanol in 2006. However, with the tight U.S. gasoline supply situation and the favorable blending characteristics that oxygenates provide in meeting gasoline specifications, U.S. oxygenate use is not expected to decrease in 2006 because of the elimination of the Federal RFG oxygenate requirement.

As discussed above, perhaps the most important factor effecting gasoline prices will be the role MTBE plays in gasoline supply for 2006. It may be argued or believed that elimination of the Federal oxygenate requirement increases the industry's potential liability concerning MTBE contamination of ground water supplies from gasoline releases into the environment. It is anticipated that gasoline suppliers will begin phasing out the use of MTBE in gasoline during the transition from winter to summer grades of gasoline in 2006.⁵ In order to replace the gasoline supply MTBE afforded, it is anticipated that ethanol will replace much of the MTBE used in reformulated gasoline in 2006.

Renewable Fuel Prices

From 2000 to 2004, ethanol spot prices traded in a range of plus or minus 40 cents per gallon relative to the conventional gasoline spot price. During the first half of 2005, the spot price of ethanol relative to the spot price of conventional gasoline was negative 40 to 80 cents per gallon. During 2004, demand for ethanol increased significantly because of State bans on MTBE. Since ethanol is the only viable oxygenate alternative, ethanol demand increased as a result of these State MTBE bans. During 2004, the demand for ethanol increased by approximately 25 percent, or 600 million gallons, from 2003. However, the domestic ethanol supply during 2004 has more than kept pace with demand as new production capacity came on-line. With added capacity, spot ethanol prices declined in the first half of 2005. However, for the reasons already discussed, ethanol demand has been increasing and spot prices for ethanol relative to conventional gasoline have reversed and have been around plus 20 cents/gallon in the last quarter of 2005.

2006 Blendstock Supply Assessment

While DOE believes that the RFP for 2006 will not have any significant adverse impacts on consumers, there are other regulatory and market based factors that have the potential to affect gasoline blendstock supply and increase gasoline price volatility in 2006. Regulatory factors affecting gasoline supply include the final phase-in of Tier 2 gasoline sulfur requirements, removal of the Federal oxygenate requirement for RFG (and its expected impact on MTBE use), and replacement of Northern RFG VOC emission requirements with the more stringent Southern RFG VOC emissions requirements.

Each of these factors works to reduce the domestic supply capacity and import availability of gasoline and gasoline blendstocks relative to 2005 levels. The refining industry has and is currently making infrastructure investments to facilitate this transition. But market adjustments will most likely be required to attract additional domestic production and imports of the lower-sulfur-MTBE-free gasoline and other higher quality gasoline blendstocks.

⁵ Oxygenate use for 2006 is based on industry announcements and DOE discussions with fuel suppliers.

California's Supply Assessment of Ethanol Use and Gasoline Supply for 2006.

The California Energy Commission released a study in November of 2005⁶ that included a survey of California refiners to quantify and assess their current and future ethanol use. The survey was used to assess what impact, if any, EPACT 2005 (which gives refiners the option to alter their ethanol use) would have on the near-term use of ethanol and the supply of gasoline in California. According to the report, California refiners have no plans at this time to increase or decrease their current ethanol blending percentage in California's motor gasoline over the near term. The reasons for this were: obligations to ethanol contracts that have not yet expired; lack of specificity for the credit trading provisions of the RFP; inadequate capability to segregate multiple types of gasoline with varying concentrations of ethanol; and uncertainty regarding the final disposition of the revisions to the California Predictive Model regulations. The report also stated that in general, California refiners are not marketing non-oxygenated California RFG (CaRFG3) anywhere in the state; nor do they plan to market non-oxygenated CaRFG3 in the near future.

Ethanol Waiver and EPACT 2005 Exclusion Authority

The Clean Air Act (CAA) ethanol waiver provision (Section 211 (h)(4)) allows gasoline that contains a 10 percent ethanol blend to have a one-pound per square inch allowance from the summertime gasoline Reid Vapor Pressure requirements. Summertime gasoline has additional evaporative emission requirements to help reduce VOC emissions of gasoline in an effort to reduce ozone levels. Ethanol raises the vapor pressure of gasoline approximately 1 psi in ten percent blends. The CAA ethanol waiver provision was provided to reduce the costs and extend the supplies of ethanol blended gasoline. Without the waiver, specially formulated low volatility gasoline blendstock would be required in order to achieve gasoline summertime vapor pressure requirements. Requiring a unique gasoline blendstock for ethanol blending increases the storage requirements for gasoline blenders and results in a loss of gasoline volume because refiners must invest in additional storage capacity and remove the more volatile gasoline blending components such as butane.

Section 1501(c) of EPACT 2005 amends section 211(h) of the Clean Air Act, the ethanol waiver provision, to allow States to be excluded from the ethanol waiver if they can document that the ethanol waiver will increase emissions that contribute to air pollution in any area in the State during the high ozone season, which is generally June 1 through September 15 in the majority of States. However, since the EPA has not received a petition from any State (as of January 31, 2006) and the effective date of such a petition if granted by EPA would not be until one year after the petition were received by EPA, no additional areas are expected to have the capability to utilize EPACT 2005 ethanol waiver exclusion authority during 2006.

⁶ California Energy Commission, *Ethanol Market Outlook for California, Staff Report*, CEC-600-2005-037, November 2005.