Renewable Fuels Legislation Impact Analysis

Energy Information Administration
July 2005

Background

On March 29, 2005, Senator James Jeffords requested that the Energy Information Administration (EIA) analyze the near- and mid-term potential price and supply effects of enacting S. 606, the Reliable Fuels Act, or S. 650, the Fuels Security Act of 2005, relative to a case without either legislation.[1] Senator Jeffords also requested an analysis of regional impacts for the Northeast and the Southwest. On May 23, 2005, EIA responded to Senator Jeffords' request with an analysis based on an extension of the ethanol supply curve in our model to allow for enough ethanol production to meet the requirements of S. 650. Subsequently, in the course of preparing to analyze H.R. 6, the Energy Policy Act of 2005, which also contains ethanol provisions, EIA staff discovered a mistake in implementing this extension that lead us to underestimate projected baseline ethanol use and overestimate the gasoline price impact of the ethanol mandates in the two Senate bills. This analysis provides an update of the May 23, 2005 analysis, with revised ethanol production and cost assumptions.

Because EIA's mid-term forecasting model operates at relatively aggregated regional levels, this analysis focuses on the price and supply impacts primarily at the national level, with some limited discussion of the Northeast and the Southwest regions

Description of Methodology and Cases

This analysis was prepared using EIA's National Energy Modeling System (NEMS) starting from the *Annual Energy Outlook 2005 (AEO2005)* October oil futures case.[2] In the Base case for this analysis, the *AEO2005* October oil futures case was updated to extend the domestic corn ethanol supply function to accommodate the renewable fuels mandates specified in S. 606 and S. 650. *AEO2005* also assumed that the Federal tax credit of $0.51 per gallon of ethanol blended into gasoline would continue to the end of the forecast in 2025.[3] Implementation of a renewable fuels mandate could affect prospects for a tax credit extension, because the mandate itself would assure the use of ethanol without the credit and increase the Federal revenue loss from an extension of the credit. The analysis cases presented below assume, as in the Base case, that the credit remains in force through 2025.

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[1]Letter from Sen. Jeffords to Guy F. Caruso, dated March 29, 2005. See Appendix.

[2]The October oil futures case projects a U.S. crude oil price that is about $5 per barrel higher than the *AEO2005* reference case projection in 2025 and corresponds loosely to the mid-term profile prices on the NYMEX oil futures market when *AEO2005* was being prepared. For more in-depth discussion of the October oil futures case, see Energy Information Administration, *Annual Energy Outlook 2005*, DOE/EIA-0383(2005) (Washington, DC, February 2005), p. 44, web site www.eia.doe.gov/oiaf/aeo/index.html.

[3]The American Jobs Creation Act of 2004, signed into law on October 22, 2004, extended the Federal tax credit for ethanol to 2010. This tax credit has been extended several times in the past, and *AEO2005* assumed it would continue beyond 2010.

S. 606 and S. 650 differ in several key respects, including the quantity of renewable fuels required, restrictions on the use of methyl tertiary butyl ether (MTBE), and the amount of credit received for the use of cellulosic biomass for ethanol production. Table 1 compares the major provisions of the two bills with those of the renewable fuels program included in the 2003 Conference Energy Bill (CEB).[4]

Table 1. Comparison of Major Provisions of S. 606, S. 650, and the Conference Energy Bill of 2003 (CEB)

Item	S. 606	S. 650	CEB
Renewable Fuels Program	**Billion Gallons per Year**		
2006	3.8	4.0	3.3
2007	4.1	4.7	3.5
2008	4.5	5.4	3.8
2009	4.9	6.1	4.1
2010	5.3	6.8	4.4
2011	5.7	7.4	4.7
2012	6.0	8.0	5.0
2013+	Proportional to renewable fuels/gasoline ratio in 2012	Proportional to renewable fuels/gasoline ratio in 2012	Proportional to renewable fuels/gasoline ratio in 2012
Coverage	Ethanol and biodiesel	Ethanol and biodiesel	Ethanol and biodiesel
Cellulosic Biomass Ethanol	1 gallon of cellulosic biomass ethanol equivalent to 1.5 gallons of renewable fuel	1 gallon of cellulosic biomass ethanol equivalent to 2.5 gallons of renewable fuel	1 gallon of cellulosic biomass ethanol equivalent to 1.5 gallons of renewable fuel; but equivalent to 2.5 gallons of renewable fuel if it is derived from agricultural residues or byproducts
Safe Harbor[a]	For renewable fuels only, not for ethers (e.g., MTBE)	No safe harbor clause	Safe harbor for both renewable fuels and MTBE
MTBE Restriction	MTBE banned 4 years after enactment of bill	No Federal ban on MTBE	MTBE banned by 2015
Oxygen Waiver in Reformulated Gasoline (RFG)[b]	Yes	Yes	Yes
Grants and/or Loan Guarantees	Miscellaneous grants and loan guarantees to facilitate renewable fuel production and transition MTBE out of gasoline	None	Similar to loan guarantees and grants in S. 606.

[a]Safe harbor provides limited protection for certain products against defect claims when used for gasoline blending.

[b]Currently, reformulated gasoline requires 2-percent oxygen by weight, which is satisfied largely by blending with either ethanol or MTBE.

[4]In February 2004, EIA published a Service Report that analyzed the effects of the CEB. See Energy Information Administration, *Summary Impacts of Modeled Provisions of the 2003 Conference Energy Bill*, SR/OIAF/2004-02 (Washington, DC, February 2004), web site http://www.eia.doe.gov/oiaf/servicerpt/pceb/pdf/sroiaf(2004)02.pdf.

The S. 606 case in this analysis includes a renewable fuels program that requires production of 3.8 billion gallons of renewable fuels in 2006, increasing to 6.0 billion gallons by 2012. Both ethanol and biodiesel are considered renewable fuels, with a 1.5-gallon credit toward renewable fuels for every gallon of cellulosic biomass ethanol produced. The use of MTBE would be prohibited nationwide, starting in 2009.[5] The S. 606 case assumes that States would not seek a waiver from the U.S. Environmental Protection Agency (EPA) to allow the continued use of MTBE. If economical, merchant MTBE producers are assumed to convert to iso-octane production, with grant assistance of up to $250 million per year between 2005 and 2008. The S. 606 case also eliminates the oxygen content requirement for reformulated gasoline (RFG) starting in 2006.

In contrast to S. 606, the S. 650 case requires 8 billion gallons of renewable fuels production by 2012, starting at 4 billion gallons in 2006. The S. 650 case allows more renewable fuels credit (2.5 gallons) for every gallon of cellulosic biomass ethanol produced, but does not restrict the use of MTBE on a nationwide basis. The S. 650 case includes the same assumption of a waiver for oxygen in RFG as in the S. 606 case.

The two bills contain similar provisions for the renewable fuels credit program. The credit program would be administered by the EPA, which would determine the renewable fuel obligations for the following calendar year based on projections by EIA in the fall of each year. Renewable fuel credits are tradable only in the same calendar year in S. 650; however, S. 606 allows credit trading for up to 2 calendar years if the EPA determines that there are excessive seasonal variations in the use of renewable fuel, again based on an annual study by EIA. Neither bill specifies a detailed credit trading mechanism, but both require the EPA to promulgate an RFP that would also regulate credit trading within a year of the enactment of the bill. Our analysis implicitly reflects the ethanol production and consumption behavior that would be stimulated by a national RFP credit trading system. The model does not force ethanol to be blended evenly across the country, which would have been the case for an RFP without credit trading and banking. As a result, our analysis shows that ethanol blending would vary by region under both Senate bills; however, it fails to capture the interregional equity transfers that would likely occur.

EIA expects that neither of the bills would have an impact on biodiesel production compared to the Base case, as neither provides additional incentives for biodiesel other than those already covered by the American Jobs Creation Act of 2004, which is included in the Base case.

Key Findings

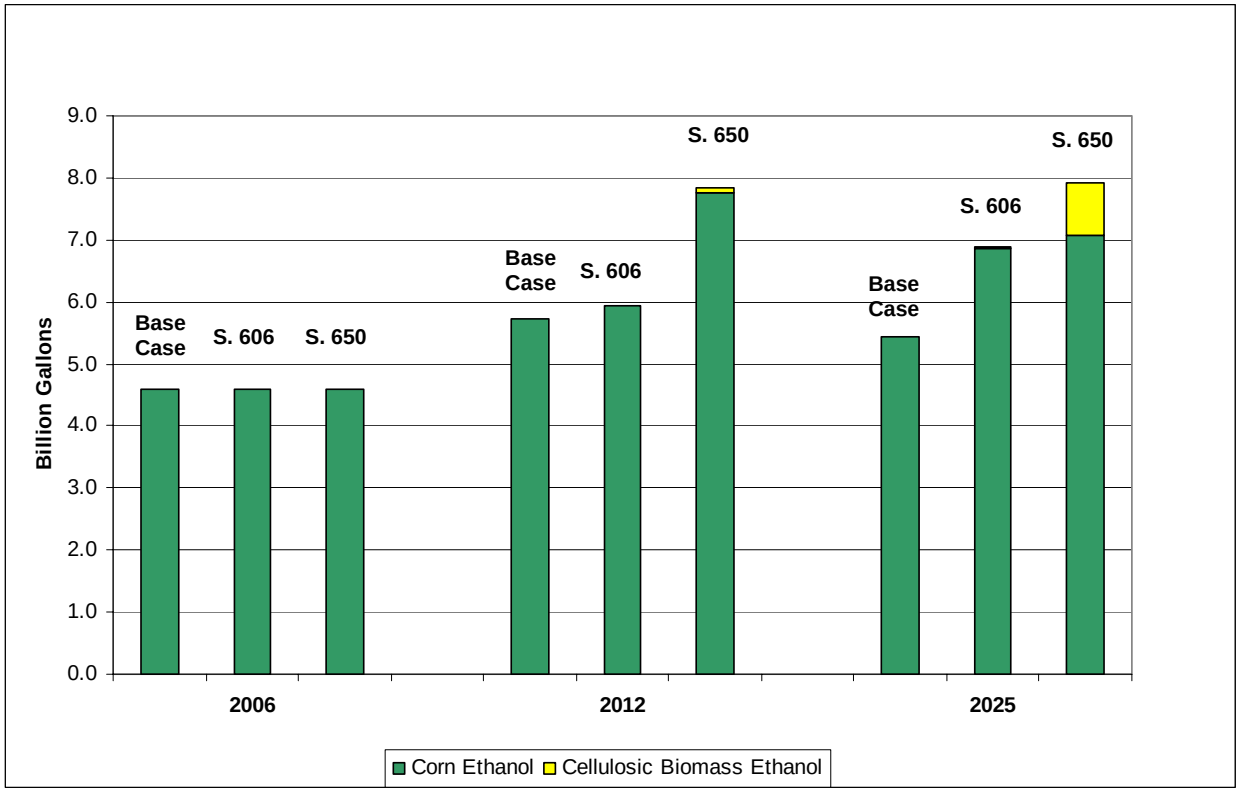
Ethanol Supply

In the Base case, corn ethanol with the Federal tax credit of 51 cents per gallon of ethanol is cost-competitive to gasoline in the first few years. As a result, the nationwide consumption of ethanol is projected to increase rapidly initially, from 4.6 billion gallons in 2006 to 5.7 billion gallons in 2012. However, due primarily to the reduced real value of the nominal Federal tax credit for

[5]The base case includes MTBE bans in 20 States (mainly in reformulated gasoline used in California, New York, Connecticut, Missouri, and Kentucky), which collectively accounted for more than one-half of the Nation's MTBE consumption before MTBE was banned in those States.

ethanol over time, the total renewable fuels consumption is projected to decrease slightly to 5.4 billion gallons by 2025 in the Base case (Figure 1).

Figure 1. Ethanol Consumption, 2006, 2012, and 2025



Source: National Energy Modeling System, runs BASEHIMPR.D063005F, S606HIMPR.D063005F, and S650HIMPR.D063005C.

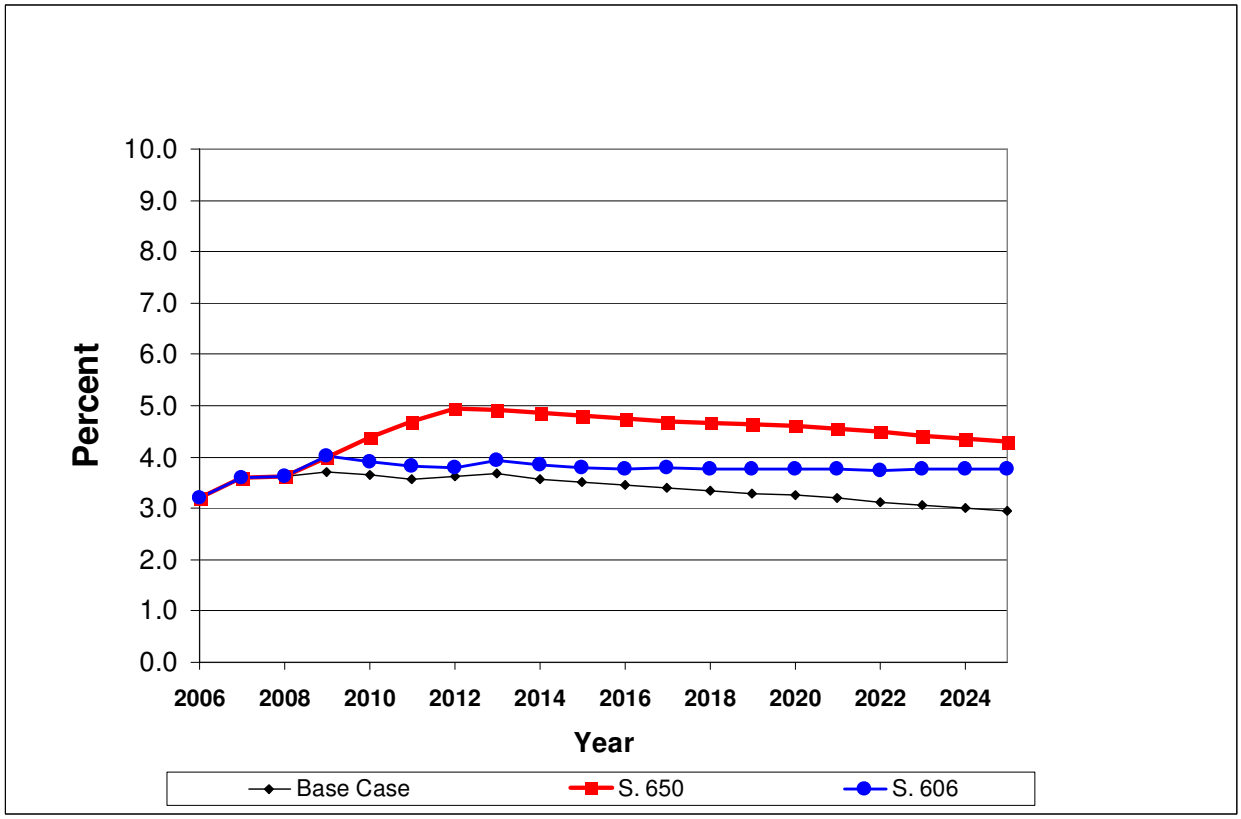
The RFP in both bills would also increase nationwide consumption of ethanol rapidly in the first few years, reaching 5.9 billion gallons in S. 606 and 7.8 billion gallons in S. 650 by 2012. The growth in ethanol demand is projected to moderate after 2012, once the RFP requirement is tied to growth in gasoline consumption, which is projected to grow by 1.2 percent per year after 2012. For S. 606, the ethanol demand would grow at a similar rate to the gasoline demand, reaching 6.9 billion gallons by 2025. For S. 650, the demand for renewable fuels does not reach 8 billion gallons because of the extra credits provided for cellulosic biomass ethanol. In addition, virtually all the growth in mandated renewable fuels consumption in the S. 650 case beyond 2012 is met through increased use of cellulosic biomass ethanol. The 2.5-gallon credit for cellulosic biomass ethanol has a dampening effect of the renewable fuels demand on the volumetric basis so by 2025 the renewable fuels demand remains essentially unchanged at 8 billion gallons in the S. 650 case, even though gasoline consumption would increase by about 16 percent between 2012 and 2025.

Cellulosic biomass ethanol production would begin in 2012 in the S. 650 case due to the higher mandated renewable fuels volumes in conjunction with the additional credits, but would only begin in 2020 in the S. 606 case. In 2025, cellulosic biomass ethanol production is projected to be 25 million gallons in the S. 606 case and 830 million gallons in the S. 650 case. Corn ethanol

plants still would provide the bulk of renewable fuels supply, with the initial capital investments already having been made to meet the RFP requirement in the early years of the program. The technology associated with cellulosic biomass ethanol is assumed to improve in time and eventually would become cost-competitive to corn ethanol, and thus would account for most of the growth in ethanol supply in later forecast years.

In 2012, the share of ethanol in the gasoline pool would increase from 2.6 percent in 2004 to 3.6 percent in the Base case, to 3.8 percent in the S. 606 case, and to 4.9 percent in the S. 650 case (Figure 2). The gradual decline in the projected ethanol market share in the Base case, measured as a percentage of total fuel volume, reflects a status quo without future incentives beyond the existing tax credit (declining in real value) or a mandate such as the RFP to encourage additional ethanol production with growing gasoline demand. The gradual decline in the ethanol market share in the S. 650 case after 2012 reflects increasing use of cellulosic biomass ethanol that receives extra credit under the RFP program. In contrast, the ethanol market share would not change much after 2012 in the S. 606 case, which reflects the mandate, because little cellulosic biomass ethanol production is expected.

Figure 2. Ethanol Content in Gasoline, 2006-2025



Source: National Energy Modeling System, runs BASEHIMPR.D063005F, S606HIMPR.D063005F, and S650HIMPR.D063005C.

The West North Central Census Division (CD 4) is the primary corn ethanol production region and is thus the region where it is most economical to absorb the additional ethanol supply under the RFP. The S. 606 case, with a 6-billion-gallon RFP requirement, would likely result in much of the conventional gasoline production in CD 4 being blended with 10-percent ethanol; other

of the conventional gasoline production in CD 4 being blended with 10-percent ethanol; other regions would absorb less of the increase.[6] With a higher RFP requirement, the S. 650 case projects 10-percent ethanol in all conventional gasoline in Census Divisions 3 and 8, in addition to CD 4.[7] Because corn ethanol is cost-competitive with gasoline in the early years even in the Base case, CD 4 is also projected to have most gasoline blended with 10-percent ethanol without any renewable fuels mandate.

Under S. 650, the composition of motor fuels used in the Northeast and Southwest would not be expected to change, because most additional ethanol supply would be blended in the Midwest or Rocky Mountain regions. In contrast, the MTBE ban in S. 606 would require more ethanol to be supplied to the Northeast, Mid-Atlantic, and Southwest for blending into RFG, even though the total RFP requirement is less than that in the S. 650 case. Despite the waiver of minimum oxygen content for RFG under S. 606, ethanol still would be used in RFG under an MTBE ban, based on economics and its other attractive blending characteristics, such as its high octane value.

Sensitivity in Ethanol Supply

The estimated impacts of both bills on ethanol consumption are sensitive to the assumptions regarding the future path of world oil prices relative to the costs of ethanol. Ethanol would be more economically attractive in a scenario with higher world oil prices, and less attractive if future world oil prices were lower than assumed in this study. Current (July 2005) world oil prices are higher than those assumed in the Base case for this study, and prices remain highly volatile. Two sensitivity cases are provided to illustrate the impact of world oil prices on ethanol consumption.

In the *AEO2005*, several world oil price cases were considered to address the uncertainty concerning oil markets. In comparison to the October oil futures case used in this analysis as the Base case, the *AEO2005* reference case (AEO05) and the *AEO2005* High B case (AEO05 High B) represent scenarios of lower or higher world oil prices. Figure 3 shows the levels of renewable fuels consumption in these sensitivity cases.

In the AEO05 case, the world oil price[8] is about $6 per barrel lower in 2012 and close to $5 per barrel lower in 2025 than the base case. As a result, corn ethanol is less cost-competitive which results in less overall renewable fuels consumption in the AEO05 case than in the base case. In contrast, the AEO05 High B case assumes a much higher world oil price, up to $13 per barrel higher at $48 per barrel by 2025, such that not only corn ethanol supply would be 1.8 billion gallons more in 2012 but 3.5 billion gallons more in 2025 than the base case. Under the AEO05 High B case, about the same renewable fuels consumption is projected as that in the S. 650 case in 2012 and almost 1 billion gallons more by 2025. Clearly, the relative costs of ethanol to world

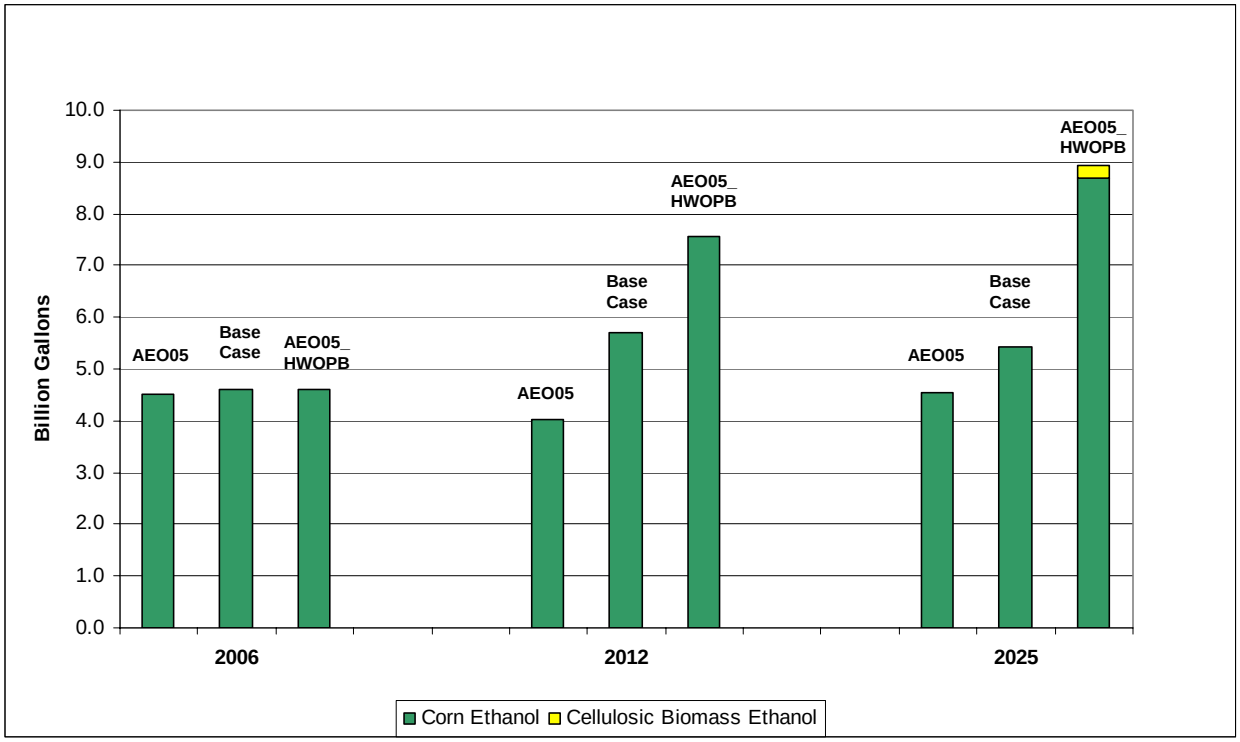
[6]The West North Central Census Division (CD 4) includes Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas.

[7]The East North Central Census Division (CD 3) includes Wisconsin, Illinois, Michigan, Indiana, and Ohio. The Mountain Census Division (CD 8) includes Idaho, Montana, Wyoming, Colorado, Utah, Nevada, Arizona, and New Mexico.

[8] The world oil price represented in the NEMS model represented the refineries' average imported crude oil acquisition cost, which could be $5 to $6 per barrel lower than the West Texas Intermediate (WTI) price often quoted in the media.

oil prices would dictate how attractive ethanol is as an alternative fuel source to gasoline. In the AEO05 High B case, significantly higher world oil prices would achieve the same or more renewable fuels consumption than either of the two Senate bills.

Figure 3. Sensitivity in Ethanol Consumption, 2006, 2012, and 2025

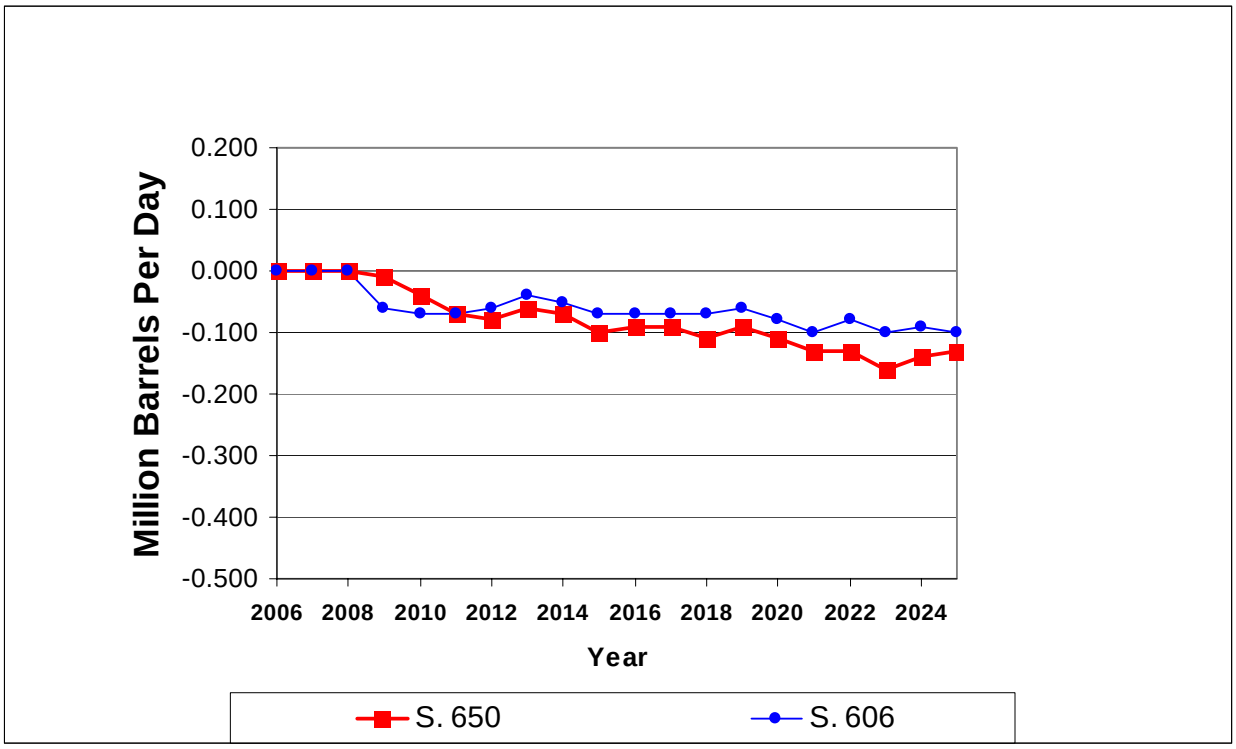


Source: National Energy Modeling System, runs BASEHIMPR.D063005F, BASEAEO.D063005A, and BASEVHW.D063005A.

Petroleum Imports

Both bills would reduce net petroleum imports, which include both crude oil and product imports. In the S. 606 case, the reduction in net imports is projected to be 60,000 barrels per day (0.6 percent) in 2012, when the RFP is fully implemented. In the S. 650 case, the reduction is 80,000 barrels per day in 2012, or a 0.8-percent reduction in net imports (Figure 4). The reduction in net petroleum imports is projected to be higher by 2025, at 100,000 barrels per day (0.8 percent) in the S. 606 case and 130,000 barrels per day (1.1 percent) in the S. 650 case. When MTBE is banned in 2009, net imports are projected to experience a short-term drop in the S. 606 case due to a temporary shortage of RFG blending materials available for ethanol blending in the Northeast. However, the petroleum market is projected to reach a new equilibrium between the supply and demand such that sufficient RFG blending materials for ethanol blending would be available a few years after MTBE is banned. Most of the reduction would result from reduced imports of gasoline and gasoline blending components into the Northeast, especially in the S. 606 case after MTBE is banned nationwide. The estimated reductions in net imports mostly reflect the substitution of ethanol for petroleum in gasoline, but

Figure 4. Reduction in Net Petroleum Imports, 2006-2025



Source: National Energy Modeling System, runs BASEHIMPR.D063005F, S606HIMPR.D063005F, and S650HIMPR.D063005C.

there is also a small decline in total gasoline energy demand in the S. 606 case due to slightly higher gasoline prices.

Gasoline Prices and Fuel Expenditures

Generally, a requirement to increase ethanol use would lead to higher ethanol production costs, especially for the marginal supplier, resulting in higher costs and prices. However, if the ethanol production costs (without tax credits) are significantly lower than that of gasoline (such as the case currently in July 2005), unless the additional ethanol production would greatly increase production costs, only a small impact on gasoline prices would be expected. Impacts on the price of fuel at the pump would differ by type of fuel and by region. For example, fuel suppliers in areas where significant amounts of ethanol are already being used are likely to face greater competition for available ethanol supplies, but they may also benefit from the program by selling tradable credits to the extent that their ethanol use exceeds the RFP requirements.

The projected effect of the RFP on the national average price of gasoline can be measured in two ways. One approach is to measure the change in the price paid at the pump. In 2012, when the RFP is fully implemented, the average pump price would be 0.1 cents per gallon (2003 dollars) higher in the S. 650 case and 0.9 cents per gallon higher in the S. 606 case than projected in the base case (Table 2). The price impact on gasoline is higher initially in the S. 606 case than in the S. 650 case because the MTBE ban would require a significant increase in RFG blending with ethanol on the East Coast with higher ethanol transportation costs. The price impact in the S.

606 case would eventually moderate with improved transportation and blending efficiency of ethanol in RFG. For the S. 650 case, the gasoline price increase in 2025 represents the economic tradeoff between the new corn ethanol production capacity and the new cellulosic biomass ethanol capacity to meet the RFP mandate, either would be more expensive than the ethanol supplied from the existing capacity. Without the 2.5-gallon credit for cellulosic biomass ethanol, the RFP would have required 1.25 billion gallon more ethanol in 2025 to meet the renewable fuels mandate. With such credit, the market could keep the gasoline price impact relatively moderate by using cellulosic biomass ethanol in lieu of corn ethanol to avoid potentially higher costs (as a result of more than 9 billion gallons of ethanol required by 2025 without the 2.5-gallon credit) at the end of the forecast. In both cases, the impact on average gasoline prices throughout the forecast is less than 1 cent per gallon.

Table 2. Impact on Gasoline Price Compared to Base Case, 2012, 2025, and 2006-2025 Average

Average Price Differential[a] (2003 Cents per Gallon)	2012	2025	2006-2025 Average
All Gasoline, Without Energy Content Adjustment			
S. 606	0.9	0.5	0.9
S. 650	0.1	0.9	0.8

[a]The Base case for this analysis is a modification of the *AEO2005* October oil futures case, with augmented corn ethanol supply.

Source: National Energy Modeling System, runs BASEHIMPR.D063005F, S606HIMPR.D063005F, and S650HIMPR.D063005C.

Although the pump price is most visible to consumers, it does not take into account that ethanol has only about two-thirds the energy content of an equivalent volume of gasoline and about four-fifths the energy content of MTBE that it would be replacing in the RFG regions in the S. 606 case. Because of these differences, changes in the average composition of gasoline sold at the pump can effect the number of gallons used to travel a given distance.

The estimated impacts of the two bills on overall consumer expenditures for gasoline are summarized in Table 3. In 2012, the S. 606 case projects an increase in expenditures for fuel of $0.3 billion (constant 2003 dollars) relative to the base case, and the S. 650 case projects an increase of $1.7 billion. The increase in expenditure reflects the combined effect of the per-gallon price increase and the change in the volume of fuel consumed. In the S. 606 case, the projected volume of fuel used is slightly less than in the base case because banning MTBE results in increased use of higher energy content blending components, so overall expenditure is only slightly higher than the base case even with an average gasoline price increase almost 1 cent per gallon. For S. 650, which increases the use of ethanol without banning MTBE, both the per-gallon price and the volume of fuel consumed are higher because of the RFP requirement, resulting in a greater increase in expenditure.

The estimated impacts on gasoline prices and expenditures would be higher for both bills if the existing Federal ethanol tax credit were assumed to expire after 2010. Expiration of the tax credit has a larger impact on prices and expenditures under the RFP than it would in the base case for this analysis, because ethanol constitutes a larger fraction of overall gasoline consumption with the RFP.

Table 3. Gasoline Consumption and Consumer Spending on Gasoline, 2012, 2025, and 2006-2025 Average

	2012	2025	2006-2025 Average
Consumption (million barrels per day)			
Base Case	10.26	11.73	10.65
S. 606	10.22	11.71	10.63
S. 650	10.32	11.76	10.68
Expenditures (billion 2003 dollars)			
Base Case	260.4	306.1	274.1
S. 606	260.7	306.6	275.0
S. 650	262.1	308.5	276.3

[a]The Base case for this analysis is a modification of the *AEO2005* October oil futures case, with augmented corn ethanol supply.

Source: National Energy Modeling System, runs BASEHIMPR.D063005F, S606HIMPR.D063005F, and D650HIMPR.D063005C.

Federal Tax Revenue Implications

Given the assumption in *AEO2005* that the Federal tax credit of $0.51 per gallon of ethanol blended into gasoline continues to the end of the forecast in 2025, higher renewable fuels demand results in additional loss in tax revenue to the Federal Government relative to the base case.[9] In the 5 years from 2006 to 2010, the projected cumulative additional loss in tax revenue in the S. 650 case is $0.7 billion (constant 2003 dollars), and in the 20 years from 2006 to 2025 it is $11.3 billion (Table 4). In the S. 606 case, the projected cumulative losses of tax revenue over the same periods are much less than the S. 650 case, $ 0.4 billion in 2006-2010 and $3.9 billion in 2006-2025. The RFP could also affect revenues or costs for other Federal programs; however, consideration of any such effects is beyond the scope of this analysis.

Table 4. Tax Revenue Implications of the RFP Cases, 2006-2010 and 2011-2025

Average Change in Cumulative Tax Revenues (Billion 2003 Dollars)[a]	2006-2010			2011-2025		
	Base Case	S. 606	S. 650	Base Case	S. 606	S. 650
Ethanol Credit[b]	-12.2	-12.6	-12.9	-30.9	-34.8	-42.9
Change in Gasoline Tax Revenue[c]	1.5	1.5	1.5	3.7	4.1	5.1
Net Change in Federal Tax Revenue	**-10.7**	**-11.1**	**-11.4**	**-27.2**	**-30.7**	**-37.8**

[a]Loss of Federal tax revenue in each case is relative to a hypothetical gasoline market where no ethanol is blended in gasoline.

[b]The Federal tax credit for ethanol is $0.51 per gallon of fuel ethanol (nominal).

[c]The Federal excise tax on gasoline is $0.184 per gallon.

Source: National Energy Modeling System, runs BASEHIMPR.D063005F, S606HIMPR.D063005F, and S650HIMPR.D063005C.

[9]Each gallon of ethanol displaces two-thirds gallon of gasoline and is subject to Federal taxes of 18.4 – 51.0 = -32.6 cents per gallon. The Federal tax foregone on two-thirds of a gallon of gasoline is 12.3 cents. Therefore, each gallon of ethanol reduces Federal excise tax revenue by 44.9 cents (32.6 and 12.3 cents).

Limitations of the Analysis

NEMS is an annual forecasting model and cannot evaluate the seasonal variations or volatility of the gasoline market. The price impacts discussed above represent national and annual averages. The price of RFG, which accounts for about one-third of the gasoline pool, could increase more significantly in the summer when it is blended with ethanol because of tighter vapor pressure restrictions. NEMS does not model evaporative or drivability indices. When ethanol is blended into RFG in the Southwest (as projected in the S. 606 case), vehicle modifications might be required to prevent vapor lock.

The RFP would lead to rapid penetration of ethanol further into the gasoline pool in the first few years of the program. Ethanol blending would vary across the demand regions, with Midwestern States likely to absorb most of the additional ethanol and Pacific Coast States likely to experience little change in ethanol consumption. NEMS does not model the program costs associated with administering the RFP—which would include the credit trading program—by either fuel suppliers or Government agencies. Further, it is not clear that an actual credit trading program would lead to "equalizing" of gasoline prices in different markets, whether gasoline is blended with ethanol or not.

NEMS also does not model the infrastructure costs necessary to deliver, blend, and store gasohol outside areas that have historically blended ethanol. Although these costs can be small (about 1 to 2 cents per gallon of ethanol[10]) when based on large volumes and a 20-year amortization schedule, it is unknown whether the investments would occur if the demand in some regions were only temporary. In the S. 650 case, about 1 billion gallons of ethanol is projected to be shipped to the East South Central Census Division (CD 6)[11] in 2012. In 2025, the greater use of cellulosic biomass ethanol with its 2.5-gallon credit and the projected growth in gasoline demand in all regions would reduce the ethanol demand in CD 6. If suppliers in the region had to build additional infrastructure for a short-term surge in ethanol demand, the infrastructure costs could be more significant.

The supply cost of corn ethanol depends primarily on the prices of corn and "distillers' dried grains with solubles" (DDGS). DDGS is a byproduct of dry mill production of ethanol. Its selling price reduces the net cost of ethanol in the analysis. Expansion of corn ethanol production increases the price that producers must pay for corn and reduces the price that they receive for DDGS. The estimated impact assumes that substitutes for corn in food products are readily available, that corn production can be expanded easily, and that new markets can be found for DDGS. If any of these conditions were not met, expansion of ethanol production could be more costly.

[10]Energy Information Administration, *Review of Transportation Issues and Comparison of Infrastructure Costs for a Renewable Fuels Standard* (Washington, DC, September 2002), web site www.eia.doe.gov/oiaf/servicerpt/fuel/pdf/question3.pdf.

[11]The East South Central Census Division (CD 6) includes Kentucky, Tennessee, Alabama, and Mississippi.

APPENDIX

March 29, 2005

Mr. Guy F. Caruso
Administrator
Energy Information Administration
U.S. Department of Energy
Room 2H-027, 1000 Independence Ave., S.W.
Washington, DC 20585

Dear Mr. Caruso:

I am writing to request that the Energy Information Administration review and compare the near- and mid-term potential price and supply effects of enacting S. 606, the Reliable Fuels Act or S. 650, the Fuels Security Act of 2005, to the scenario of not adopting such legislation. Such an analysis would be most helpful if it were completed well in advance of the Senate's consideration of such legislation or of a larger package of energy policy measures. Further, I would appreciate any regional specificity that EIA can provide in the analysis, especially with regard to impacts in the Northeast and the Southwest.

Thank you for your assistance. Please contact me with any questions or comments on this matter or have your staff contact my staff person with the Environment and Public Works Committee (Chris Miller at 224-2969).

Sincerely,

James M. Jeffords
Ranking Member