

## **Impact of Renewable Fuels Standard/MTBE Provisions of S. 517 Requested by Senators Daschle and Murkowski**

### **Introduction**

In response to a letter from Senators Daschle and Murkowski dated April 10, 2002, the Energy Information Administration (EIA) is providing additional analysis of the impact of the Renewable Fuels Standard (RFS) and methyl tertiary butyl ether (MTBE) ban provisions of S. 517. As requested, the projected consumer cost of the S. 517 provisions is compared with a Reference Case that assumes a 2 percent oxygen requirement is maintained and that already-scheduled MTBE restrictions or bans become effective in 14 States: Arizona, California, Colorado, Connecticut, Indiana<sup>1</sup>, Iowa, Illinois, Kansas, Michigan, Minnesota, Nebraska, New York, South Dakota, and Washington. In order to isolate the impact of the RFS provision, EIA has provided another “RFS/No MTBE Ban” Case, which assumes no national requirement to ban MTBE. The consumer impact of the S. 517 provisions is also compared to a scenario that assumes that all remaining Northeast States with reformulated gasoline (RFG) markets will ban MTBE in 2004, referred to as the “19-State MTBE Ban” Case. In this Case, MTBE is also banned in RFG markets in New Hampshire, Massachusetts, Rhode Island, Pennsylvania, and New Jersey.

The “S. 517” Case reflects a national phase-down of MTBE by 2006, and a 10 year ramp-up in the amount of renewable fuels included in gasoline, reaching a maximum of 5 billion gallons per year in 2012, and the elimination of the oxygen requirement on RFG. S. 517 contain a provision for States to waive the MTBE ban. As stated by Senators Daschle and Murkowski in their April 10 letter, this provision is implemented in the EIA analysis by assuming that MTBE may continue to be used at 13 percent of current levels for those States that have not banned MTBE. This results in an effective MTBE reduction of 87 percent.

Senators Daschle and Murkowski requested that this analysis reflect the effects of renewables banking and trading; however, this was not feasible given the requirement for rapid delivery of the analysis. The impact of a national credit trading program on local markets is complicated by its connection to State tax programs and local air quality concerns. As with previous EIA analyses, this analysis represents RFG as a homogeneous product and does not capture the different variations of RFG produced at different refineries. Based on EIA’s experience with electricity industry analysis that incorporated credit trading and banking for sulfur dioxide emissions, credit trading reduced the impact on consumer prices and banking provided greater flexibility for the timing of implementation. Generally speaking, a credit trading and banking program would be expected to facilitate greater market efficiency and probably reduce costs of compliance, such as transportation and blending costs. Since this analysis does not incorporate credit trading and banking, the results are likely to represent an upper bound of the costs associated with S. 517.

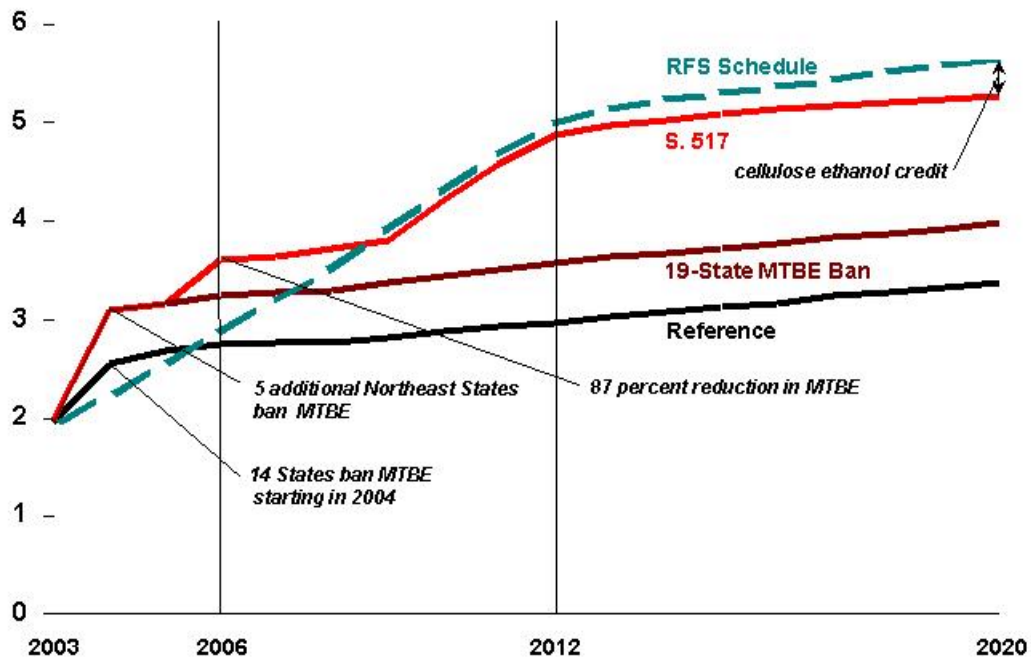
### **Results of MTBE Ban Cases**

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<sup>1</sup> Legislation to ban MTBE in Indiana on July 23, 2004 was signed by Governor O’Bannon on March 14, 2002. The State does not require RFG.

The RFS provision of S. 517 includes an RFS schedule that requires consumption of 2.3 billion gallons of renewable fuels by 2004, increasing to 5.0 billion gallons by 2012. After 2012, S. 517 requires renewable fuels to maintain the same percentage of transportation fuels that will be achieved in 2012. This analysis projects that the Reference Case market demand for ethanol would be 260 million gallons greater than the amount specified by the RFS schedule in 2004 due to the implementation of State-level MTBE restrictions in 14 States (Figure 1). The 19-State MTBE Ban Case indicates, that if other Northeastern States with RFG markets followed suit and banned MTBE in the same year, an additional 540 million gallons of ethanol would be required

**Figure 1. Total Renewable Fuels Consumption For Transportation In Three Cases, 2003-2020 (billion gallons per year)**



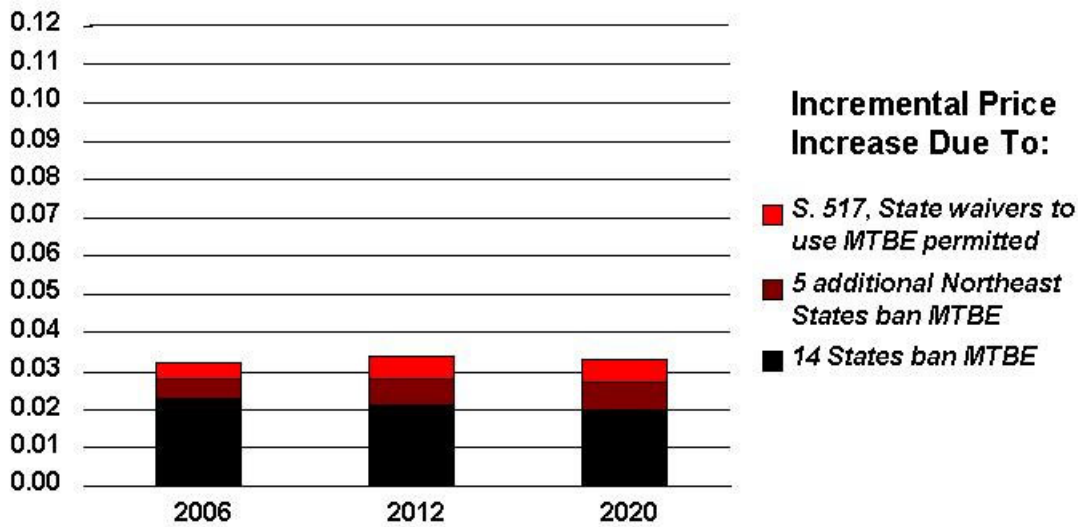
**Source:** Energy Information Administration, National Energy Modeling System runs RFAe02A.d041002b, RFAe02B.d041002b, RFI1m0b0.d041102d

in 2004, assuming the oxygen requirement were maintained. This analysis projects that the RFS and MTBE provisions of S. 517 Case, assuming an 87 percent reduction in MTBE blending, would result in ethanol blending that is 390 million gallons per year higher than the 19-State MTBE Ban Case and 880 million gallons per year higher than the Reference Case in 2006. The projected level of ethanol blending in the S. 517 Case is 3.62 billion gallons, 720 million gallons above the specified RFS target for 2006. Ethanol blending would no longer be in excess of the RFS targets by 2009 due to incremental growth of the specified targets. The use of renewable fuels is projected to be below the RFS targets after 2009 due to an S. 517 provision that provides

a 1.5 gallon credit for every gallon of cellulose (biomass) ethanol, although the industry would still be in technical compliance with the provision.

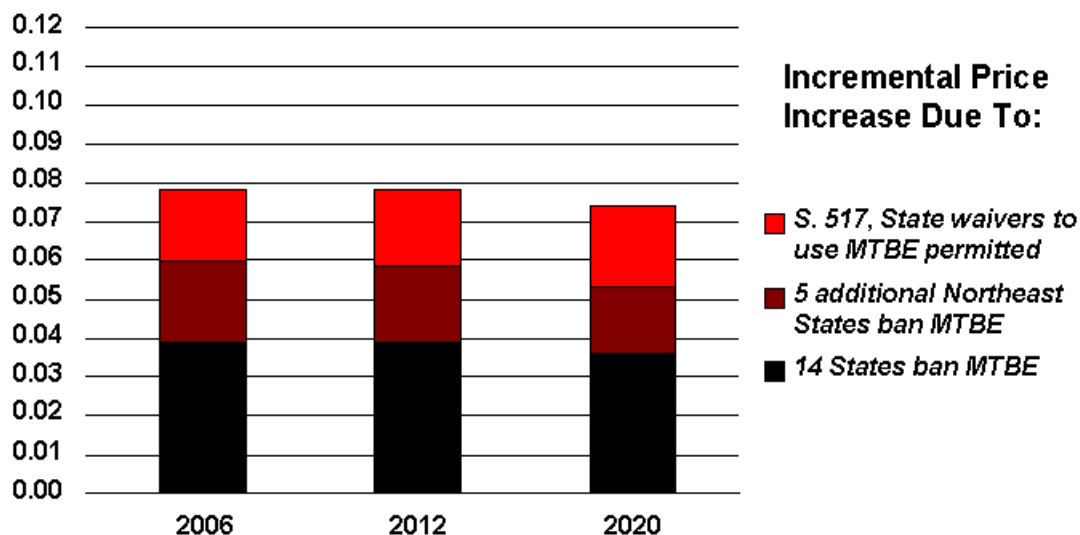
Unlike EIA’s previous analysis of RFS/MTBE provisions, the Reference Case of this analysis reflects legislation in 14 States that would restrict or ban the use of MTBE by 2004. The inclusion of these State-level restrictions in Reference Case projections results in average annual prices for all gasoline that are roughly 2 cents per gallon higher than they would have been without the restrictions (Figure 2); and RFG prices that are 3.5 to 4 cents per gallon higher (Figure 3). The price impact of implementing the 14 State-level restrictions is slightly dampened over time as incremental changes at refineries minimize the impact of the lost MTBE volumes. If other Northeast States with RFG markets are assumed to ban MTBE, as in the 19-State MTBE Ban Case, the average annual price of all gasoline is projected to be about a half-cent per gallon higher than the Reference Case, and the RFG price is 2 cents per gallon higher than the Reference Case. The S. 517 price projections represent an additional price increase above the 19-State MTBE Ban of about 0.5 cent per gallon for all gasoline and 2 cents per gallon for RFG in 2006.

**Figure 2. Average National Gasoline Price Differentials In 2006, 2012, And 2020 (2000 dollars per gallon)**



**Source:** Energy Information Administration, National Energy Modeling System runs R1a02z.d022702a, RFa02A.d041002b, RFa02B.d041002b, RFI1m0b0.d041102d, R1i1m0bo.d022802b

**Figure 3. Average RFG Price Differentials In 2006, 2012, And 2020  
(2000 dollars per gallon)**



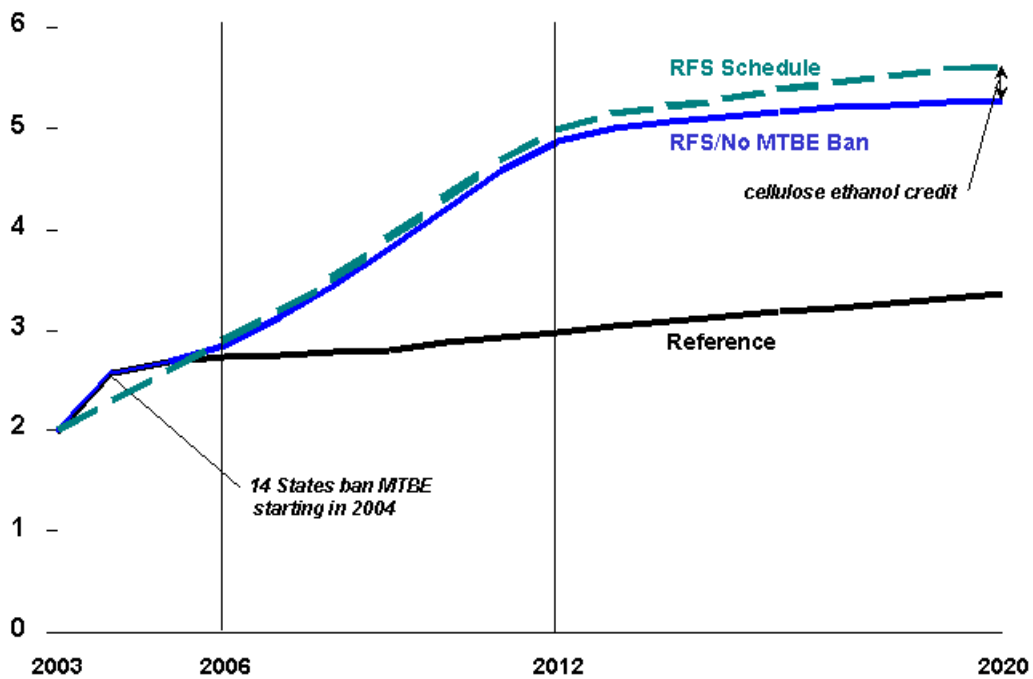
**Source:** Energy Information Administration, National Energy Modeling System runs R1aep02z.d022702a, RFaep02A.d041002b, RFaep02B.d041002b, RF11m0b0.d041102d, R1i1m0bo.d022802b

Relative to the Reference Case, the projected price increases of the S. 517 case translate into a higher annual cost to consumers of \$2.06 billion on average between 2006 and 2020. When compared with the 19-State MTBE Ban Case, S. 517 is projected to result in an increase in the average annual cost to consumers of \$980 million.

### Results of Renewable Fuel Standard Without an MTBE Ban

The RFS/No MTBE Ban Case reflects the impact of an RFS in the absence of the MTBE phase-down provisions of S. 517. Because of the State-level MTBE restrictions occurring in 2004, the renewable fuels consumption prior to 2006 is identical to Reference Case levels and above the RFS targets. Starting in 2006, projected renewable fuels consumption is essentially determined by the RFS targets with the adjustment for the cellulose ethanol credit (Figure 4). Adjusting for the cellulose ethanol credit, renewable fuels consumed for transportation is projected to be 60 million gallons below the specified RFS target for 2006, and 130 million gallons below the 2012 target, although still in technical compliance. The 2006 projections in this Case are about 100 million gallons above the market demand for ethanol projected in the Reference Case. Due to incremental growth in the RFS schedule, the difference between the RFS amount (adjusted for the cellulose credit) and the market demand projected in the Reference Case widens to 1.90 billion gallons per year by 2012.

**Figure 4. Total Renewable Fuels Consumption For Transportation For RFS/No MTBE Ban Case, 2003-2020 (billion gallons per year)**



**Source:** Energy Information Administration, National Energy Modeling System runs RFaeo02A.d041002b, RFI0mXb0.d041102b

As indicated in the RFS/No MTBE Ban Case, an RFS provision without a Federal MTBE ban is projected to raise gasoline prices by up to 0.5 cent per gallon for all gasoline, and by up to 1 cent per gallon for RFG. These price increases imply an annual average cost to consumers between 2006 and 2020 that is \$260 million higher than in the Reference Case.

## United States Senate

WASHINGTON, DC 20510

April 10, 2002

Dr. Mary Hutzler  
Acting Administrator  
Energy Information Administration  
1000 Independence Avenue, S.W.  
Washington, D.C. 20585

Dear Acting Administrator:

The Senate is actively debating comprehensive energy legislation (S. 517). Important to the bill are the provisions requiring a four year phase down of the use of MTBE in gasoline and a ten year ramp up in the amount of renewable fuels included in gasoline, reaching a maximum of 5 billion gallons per year in 2012. The increased use of such U.S. produced fuels is, we agree, important to our national energy security.

We are concerned that the recent EIA analysis of the consumer impact of the renewable fuel and MTBE provisions of this bill applied an incorrect set of assumptions that differ markedly from the final provisions in S. 517. Furthermore, the base case that EIA employed in its analysis varies in important respects from the actual situation that applies today, with states acting on their own to ban the use of MTBE. Therefore, the price impacts of the bill predicted by the EIA analysis appear to be significantly overstated.

This is not the EIA's fault, but rather an outgrowth of the compressed schedule in responding to Senator Murkowski's original request for EIA analysis. In fact, the EIA specifically raised the possibility of incomplete inputs for the economic modeling used, for which we applaud your prescience. Please consider this as a request for an update, using better information which reflects the bill in its final form.

In order to provide an accurate assessment of the consumer impact of this bill, we are requesting that EIA analyze the consumer cost of the MTBE and renewable provisions of the bill (with full allowance for the effects of banking and trading renewable fuels credits) relative to the following alternative scenarios:

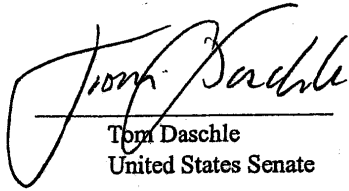
- The existing MTBE restrictions or bans in Arizona, California, Colorado, Connecticut, Iowa, Illinois, Kansas, Nebraska, New York, South Dakota and Washington go into effect and the 2% oxygenate requirement for RFG remains in place.
- In addition to the 13 states above, all the remaining North East states ban MTBE in 2004 and the 2% oxygenate requirement for RFG remains in place (this represents existing law without any of these proposed changes).

In addition, to reflect the effect of possible state waivers of the MTBE phase out, as allowed for in the bill, please include in your analysis of the provisions in S. 517 the continued MTBE use in gasoline at 13% of today's level -- roughly the amount that would be used if a state like Texas were to exercise this option.

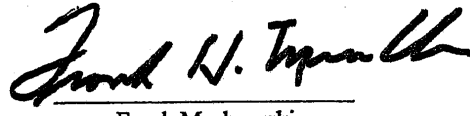
Finally, due to the fact that the Senate currently is debating these issues, we would very much appreciate receiving your analysis by close of business on April 12.

Thank you for your assistance in this matter.

Sincerely,



Tom Daschle  
United States Senate



Frank Murkowski  
United States Senate