

Written Comments

Submitted to the Commonwealth of Pennsylvania
Senate Environmental Resources & Energy Committee

Submitted by
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Clean Transportation Advisory Council
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Thank you for allowing the Clean Transportation Advisory Council (CTAC) this opportunity to provide comments to the Senate Environmental Resources and Energy Committee regarding the use and impacts of gasoline additives on fuel supply and the environment. CTAC believes that any legislation that would constrict the availability of important, cleaner-burning gasoline components should be fully debated and very carefully considered before any possible final action is taken. The consequences and impacts that would result from significant modification of gasoline products available to Pennsylvania's consumers and motorists must be thoroughly understood to avoid potential disruptions to supplies, increases in cost or degradation of air quality from higher emissions. I strongly urge the Committee members to reject any legislation that would limit the use of readily available gasoline components, thereby benefiting Pennsylvania's motorists by:

- Helping ensure stability in both gasoline supply and pricing;
- Keeping competitive forces working in the state's fuel marketplace;
- Maintaining gasoline product quality and improved performance properties;
- Allowing flexibility to gasoline producers and marketers, especially during episodes of market supply disruption.

Option to Blend MTBE Helps Control Gasoline Prices

To investigate the impacts of restricting fuel blending options, CTAC examined recent retail gasoline prices in the Mid-Atlantic region available from the AAA/OPIS online reports (November 2005 through March 2006), and historical refinery margins for gasoline production based on Platt's commodity petroleum prices. For comparable cleaner-burning gasoline areas, and after adjusting for different tax rates in the states, we found significant pricing differences between the Philadelphia marketplace and those of Bridgeport, Connecticut, and New York City, New York. More than two years after Connecticut and New York implemented restrictions on the blending of MTBE to gasoline, leaving only fuel-ethanol as an alternative blending component, New York City and Bridgeport consumers are paying on average between 13 cents per gallon (New York City case) and 10 cents per gallon (Bridgeport case) MORE for their gasoline compared to motorists in Philadelphia. Cleaner-burning, reformulated gasoline (RFG) sold in Pennsylvania has competitive mechanisms which prevent the area from becoming isolated from alternative supply sources, and consequently helps to restrain prices at the pump.

Eliminating MTBE Blending Reduces Gasoline Production

Fuel supply flexibility in Pennsylvania – by allowing gasoline producers and blenders product options – helps to expand the overall gasoline volumes made available. More importantly, competitive forces that help to maintain supply and restrain prices are disrupted when choices are artificially limited, particularly for commodity products like gasoline. The impact of restricting clean gasoline blending components affects supplies not only in Pennsylvania, but also the entire region. According to the U.S. Department of Energy, Energy Information Administration, the “...elimination of MTBE in the gasoline pool will result in a reduction of supply, which will put upward pressure on prices.” (*This Week in Petroleum*; February 15, 2006). The EIA concludes that MTBE removal has the potential to cause further volatility in prices due to:

- Loss of production capability
- Loss of import supply sources
- Increased difficulty in delivering the new products, including the need for extra tankage
- Inventory pinch when inventories of old product must be drawn down and tanks prepared for new product.

To examine the impacts of eliminating MTBE blending from gasoline, CTAC sponsored a gasoline supply and economics analysis that was conducted by MathPro Inc. MathPro is an independent oil refinery modeling and consulting firm used by industry and government to evaluate the impacts on supply and cost of fuel products due to fuel quality and regulatory changes. MathPro’s analysis¹ specifically looked at the projected impacts of removing MTBE from gasoline by oil refineries located in the Delaware Valley river basin. These refineries supply much of the gasoline used in Pennsylvania and surrounding states. The study revealed that there would be significant negative consequences for the regions gasoline markets if MTBE blended gasoline was eliminated. Since precise predictions cannot be made about exactly how the market will respond to MTBE elimination, MathPro evaluated four possible conditions (scenarios) that essentially bracket the possible market responses. The four scenario matrix included using ethanol in place of MTBE, not using either ethanol or MTBE, keeping RFG prices constant, and allowing RFG prices to increase to maximize RFG production. The study findings showed that:

- MTBE blended gasoline represents about 45% of the gasoline produced by these local refiners – MTBE is generally blended at 11 % by volume to make Reformulated Gasoline (RFG).
- In the case where no oxygenate (neither MTBE nor fuel-ethanol) blending occurs, production of RFG by local refiners is not feasible unless marginal costs are allowed to increase substantially – even an increased marginal production cost of 20 cents/gallon still results in decline of RFG output by 50% (and total gasoline output would go down by 10% compared to the base case where MTBE blending is used).
- In the case where 10% by volume of fuel-ethanol is used, the RFG production falls by 40%, and total gasoline production declines by about 3% when the marginal cost (for RFG) is not allowed to increase. When marginal costs are allowed to increase by 10 cents/gallon, then RFG output can be maintained by blending fuel-ethanol, however, total gasoline production still goes down by 3%. This scenario – using ethanol blending – assumes that new (and adequate) ethanol supplies are secured and transported by railcar from Midwest sources, and that new storage tanks are installed at Pennsylvania gasoline terminals.

The MathPro analysis indicates that – to make up the production shortfall caused by eliminating MTBE use – the Delaware Valley refiners would have to invest in expanded

production capacity and process additional crude oil, or have to import expensive, alternative high quality gasoline blendstocks, most likely from offshore sources.

The loss of fuel market flexibility brought about by state bans is only one factor contributing to increasing transportation fuel costs. Recent increases in oil prices are highlighted as a key cause for escalating gasoline prices nationwide, however more significantly, refiner margins above the cost of crude have also expanded. Based on historical data available through Platts, gasoline summertime margins, when demand is highest, have risen since 2002. Since MTBE bans were implemented in California, Connecticut, and New York starting in 2004, summer gasoline crack spreads have increased about 10 cents per gallon versus the 2003 summer driving season (crack spreads are an established indicator of refinery production margins). These refinery margins have grown from about 11 cents/gallon in 2002 to nearly 30 cents per gallon last year. As refinery operations move to peak output as the summer season approaches, restricting the availability of cleaner-burning gasoline products only worsen the conditions that lead to higher prices for motorists in Pennsylvania and across the nation.

In Pennsylvania, for example, the removal of MTBE blending from its reformulated gasoline supply would be equivalent to about 255,600 gallons per day (over 93 million gallons annually), based on data from the Energy Information Administration's *Petroleum Marketing Monthly*. This volume would ultimately need to be made up by mixing fuel-ethanol shipped from the Midwest, or by using other high cost blend stocks. According to last week's fuels report published by DeWitt and Company (March 30, 2006; Houston, Texas), the East Coast price of fuel-ethanol was \$2.60 per gallon, while the price quote for MTBE was \$1.67 per gallon – a differential of over ninety cents per gallon. Even accounting for the tax-credit subsidy for fuel-ethanol, its substantially higher price compared to MTBE leads to higher blender costs that are passed on as higher pump prices to consumers.

Pennsylvania's Current RFG has Reduced Vehicle Emissions

Pennsylvania's use of cleaner-burning, reformulated gasoline (RFG) in the Philadelphia metro area since the mid-1990's is responsible for substantial reductions of vehicle emissions, leading to significant public health benefits by lowering exposure to harmful pollutants. According to the U.S. Environmental Protection Agency (EPA) data on RFG properties and performance averages, the current RFG formulation has reduced summertime, mobile source emissions of volatile organic compounds (VOCs) by over 28 percent, air toxics by about 33 percent, and nitrous oxides (NO_x) by about 8 percent. Over the past ten years of the program, MTBE has been the oxygenated blended into the gasoline used to accomplish is remarkable level of emissions reductions. Prohibiting the option and choice to allow its use could result in backsliding on actual achievement in emissions reductions. Even without the federal oxygen standard, MTBE has a major role to play in Pennsylvania as an economical, clean octane blendstock that can provide the greatest emissions reductions of all other gasoline high octane components.

The impact of removing the option for MTBE blending to a state's gasoline supply is clearly summed up by the statement in the EIA's presentation "*Effects of Feed Quality and Product Specification Changes on Refined Product Supply.*" This statement is "...what is not fully appreciated by people outside of the petroleum business is that losing MTBE is more than losing the volumes of this blending component. No other hydrocarbon or alcohol equals the emission and engine performance characteristics of ethers such as MTBE. Hence, losing a barrel of MTBE results in losing more than a barrel of gasoline." (EIA presentation at National Petrochemical & Refiners Association Annual Meeting, March 2003, San Antonio, Texas).

Study Shows Ethanol-Blending Impacts Emissions

A study conducted in 2004 for the California Air Resources Board found that changing to ethanol-blended gasoline increased vehicle fuel system permeation by up to 65 percent over previous formulations. Pennsylvania must account for this higher emissions level in its State Implementation Plan (SIP) and its Rate-of-Progress (ROP) assessments for meeting National Ambient Air Quality Standards. Failure to come up with off-sets and emissions reductions from other sources could, in the longer term, impact industrial development within the state.

More recently the Coordinating Research Council released a final report on “*Effects of Ethanol and Volatility on Exhaust Emissions*” (CRC; 20 January 2006). This study found that exhaust emissions, including air toxics, mostly increased as volatility characteristics of the gasoline increased with higher ethanol blending levels. For example, benzene (a known human carcinogen) emission increased by 18% when ethanol content was increased from zero to ten volume percent. The results demonstrate that substitution of fuel-ethanol into cleaner-burning gasoline substantially impact the emissions properties.

CTAC Urges Restrain on Unnecessary Legislation

CTAC provides industry and government with technical information aimed to help improve the understanding of current and future transportation and fuels issues. CTAC has advised state and federal governments about the impacts of legislative action on fuel supplies, prices and air quality. Based on the information presented in these comments, CTAC strongly recommends that the Pennsylvania legislature avoid premature and unnecessary action that would constrain the transportation fuel supply and create more uncertainty in the marketplace.

CTAC appreciates this opportunity to provide our comments, and would agree to provide further available information to assist the Senate Environmental Resources and Energy Committee members as they deliberate these important matters.

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¹ MathPro Inc., “*Effects of Eliminating MTBE Use on the Production of Summer Gasoline by Delaware Valley Refineries*,” April 4, 2006, Final Report to Clean Transportation Advisory Council.