

## ETHANOL AND GASOLINE PRICES

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The importance of ethanol to America's energy security and to American consumers has never been greater. According the U.S. Department of Energy's Energy Information Administration, the national average price of regular gasoline hit a new record level of \$2.064 per gallon last week. No relief is in sight for consumers as gasoline prices are expected to continue rising through the peak summer driving season.

Memorial Day marks the beginning of the peak summer driving season and the growing economy has boosted consumer income and demand. Combined with uncertainties over supply, this situation makes the supply of ethanol produced in American plants from grain and other agricultural products grown by American farmers all the more important for consumer's pocketbooks, the American economy, and the nation's fuel security.

If ethanol were not available to provide consumers with a large supply of clean motor fuel, national average retail gasoline prices would be even higher than they already are. The need to find the additional gasoline to replace ethanol in today's tight market would result in a sharp short-term (several months) increase in the national average retail price of gasoline. Without the vibrant and growing domestic ethanol industry, consumers would be forced to pay as much as 14.6 percent more for gasoline at the pump this summer. At today's prices this translates into an additional 30.2 cents per gallon!

The reason for this is that both the supply and demand for gasoline is inelastic. That is, in the short term consumers have relatively few alternatives to gasoline so that when prices rise sharply consumers can make only small adjustments to consumption. However over a longer period of time consumers will have a greater ability to look for alternatives such as buying more fuel-efficient vehicles or changing commuting patterns. Similarly, due to factors such as infrastructure constraints (e.g. high capacity utilization), producers may not be able to increase output significantly in the short term. Over the longer-term, producers can build new capacity or seek alternative sources of supply.<sup>1</sup> Consequently, a supply disruption can result in a large short-term price increase.

Given a longer period for producers to adjust, a shortfall of this magnitude would raise gasoline prices 3.7 percent, or 7.7 cents based on today's prices, over the long term.

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<sup>1</sup> The magnitude of the change in demand caused by a change in price and in price caused by a change in supply depends on the elasticity. Economists generally agree that the short-term demand elasticity for gasoline is in the range of -0.04 to -0.40 (midpoint -0.20) while the long-term elasticity is in the range of -0.23 to -1.37 (midpoint -0.8). These elasticities imply that a gasoline shortfall of 2.9 percent would result in a short-term increase in prices of 14.6 percent. Given the ability to adjust supplies the long-term price impact would be 3.7 percent. See *MTBE Phase Out in California*. Stillwater Associates for the California Energy Commission. P600-02-008CR. March 2002.

Ethanol is blended with gasoline to improve octane and performance, and to add oxygen so that motor fuel burns cleaner and reduces emissions of carbon monoxide and ozone-forming compounds. This year more than 30 percent of all of the gasoline sold in the United States will contain ethanol. The American ethanol industry has the capacity to produce 3.3 billion gallons this year and an additional 423 million gallons of capacity currently are under construction and will come on line within the next year. Since ethanol is blended with gasoline, ethanol actually increases the quantity of motor fuel available to American consumers.

If ethanol were not available, America would need an additional 3.3 billion gallons of gasoline to meet demand at current prices. This amounts to about 217,000 barrels of gasoline production per day. Additionally without ethanol refiners would be forced to find alternative blending components that add 113 octane and enables them to continue to meet environmental standards.

Gasoline is refined from crude oil. Blending ethanol with gasoline literally makes the same amount of gasoline go farther and reduces the amount of crude oil we need to import accordingly. The marginal supply of crude oil is controlled by the OPEC cartel. While at least one member – Saudi Arabia – has recently indicated a willingness to increase oil production, other OPEC members have not yet followed. Also, a large share of the world's crude oil supply comes from the Middle East. Fears about possible terrorist attacks that could disrupt the flow of oil from the region have added a risk premium to world oil prices.

America's oil refineries are operating near full capacity to maintain supplies of gasoline and other petroleum products. Our refinery industry is aging and increasingly susceptible to outages from equipment failure or accident. Unlike the ethanol industry, no new oil refineries have been built in the U.S. in the past twenty-five years and none are planned. Even if more crude oil were made available, it is unlikely that it could be refined into gasoline in the short-term. Any additional gasoline supplies would have to be imported from foreign refineries struggling to meet rapidly growing demand in China, India, and other regions of the world.