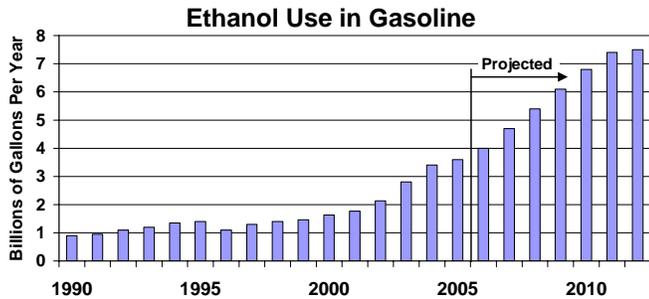


ETHANOL – MYTH VS. REALITY

It appears that lawmakers in Washington, D.C. will soon be expanding our use of an ethanol – gasoline mixture commonly known as “gasohol.” The Renewable Fuel Standard (RFS) currently in front of Congress would increase the use of ethanol from today’s average of 2%, to more than 5% of gasoline consumed. “It appears that the pending RFS is based more on politics than science or economics,” says Scott Jensen, Senior Consultant at Dallas-based energy consulting firm **Baker & O’Brien, Inc.** “There are some widely reported ‘myths’ about the benefits of ethanol.” In this article, Scott talks about some common misconceptions regarding ethanol use in gasoline.

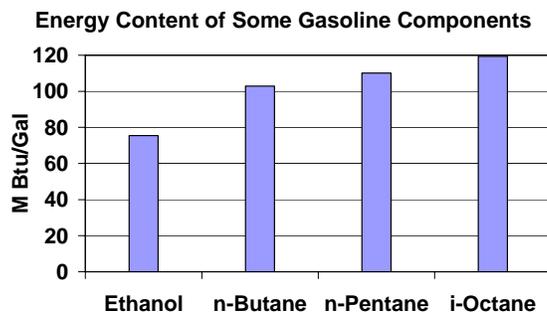


MYTH NO. 1: ETHANOL WILL REDUCE OUR DEPENDENCE ON IMPORTED OIL

Says Mr. Jensen, “Adding ethanol to our gasoline will do very little to lower oil imports.” When added to gasoline, ethanol increases gasoline volatility. To compensate for this, refiners must remove other light gasoline components like butanes and pentanes. This displacement, combined with ethanol’s lower mileage, as discussed below, means that using ethanol has little, if any, effect on oil imports.

MYTH NO. 2: ETHANOL PROVIDES FUEL ECONOMY SIMILAR TO GASOLINE

On the contrary, ethanol’s energy content is only about two-thirds that of ordinary gasoline. Thus, gasohol, which typically contains 10% ethanol, gives about 3% fewer miles per gallon. Looking at it another way, you need to burn 10 gallons of ethanol to produce the same energy as only 7 gallons of gasoline. This economic penalty is often overlooked.



MYTH NO. 3: ETHANOL CAN BE “EASILY” BLENDED INTO GASOLINE

Producing and distributing gasohol raises many costly logistical problems. Very small amounts of water that are normally present in gasoline pipelines and terminals have no effect on the quality of ordinary gasoline. However, ethanol’s affinity for water prohibits gasohol from being blended at refineries and shipped through pipelines. It must be blended just prior to delivery to the service station. Because most ethanol is—and will continue to be—produced in the Midwest, it must be shipped in rail tank cars to other U.S. markets, at a substantial cost. Finally, storing gasohol demands new design standards to

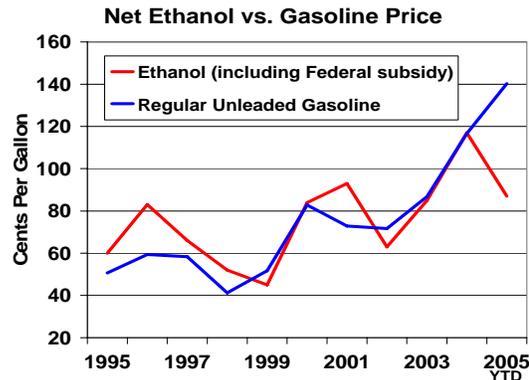
ensure a water-free environment. These challenges add more costs throughout the supply chain.



Scott D. Jensen

MYTH NO. 4: ETHANOL WILL LOWER THE PRICE OF GASOLINE

Over the past ten years, the price of ethanol, after allowance for the Federal subsidy, has been surprisingly close to the price of gasoline. “So don’t expect gasoline prices to fall at the service station because of ethanol, especially during the summer driving season,” says Mr. Jensen. Summer gasoline must be low in volatility to meet emissions regulations. In order to use ethanol, refiners have to make a special low volatility base gasoline, which is not only expensive, but also limited in the volume that can be produced. So even if the cost of ethanol is occasionally lower than ordinary gasoline, much of this benefit can be lost due to the higher cost of making the base gasoline.



MYTH NO. 5: ETHANOL REDUCES AIR POLLUTION FROM AUTOMOBILES

The reality is that no one knows for sure. Because the ethanol molecule contains an oxygen atom, burning it in older carbureted vehicles will “lean out” the air-fuel mixture and directionally reduce emissions—but with some loss in performance. However, this effect is not seen in today’s modern computerized fuel injected vehicles. Studies of ethanol’s effect on the latter are mixed. Although ethanol promotes the reduction of carbon monoxide, recent studies show that it actually increases nitrogen oxides, aldehydes, and volatile organic compounds. All of the latter are either carcinogens or smog precursors. Clearly, more information is needed.

SO WHY THE PUSH TO INCREASE ETHANOL?

Frankly, it’s very hard to understand the push for increased ethanol usage—unless you take politics into consideration. Ethanol should be allowed to take its natural place in the Nation’s energy mix on a state-by-state basis, and only where it makes economic and technical sense.