Fuel Choice Factors Influencing Today’s Drivers

Today’s drivers have a variety of factors that are taken into consideration when choosing where to fuel, and which fuel to select. Economics - the cost per gallon of fuel - play a leading role in the selection of both where and which fuel is used. As many drivers routinely track their vehicle’s fuel economy, there are several factors the consumer must include when calculating fuel economy. There are many new ethanol blended fuels available to consumers, especially owners of Flexible Fuel Vehicles.

Fuel Economy

The Future of Fuel Economy
Staples of President Obama’s energy policy, as laid out in March 2012, include increasing fuel efficiency and increasing the prominence and availability of alternative fuel vehicles. More stringent Corporate Average Fuel Economy (CAFÉ) standards were established in addition to making future investments in alternative fuel vehicles and fuel infrastructure. CAFÉ standards will require cars in 2025 to achieve 54.5 miles per gallon. An analysis from the auto engineering firm, Ricardo, noted future cars will need to run on a higher octane, gasoline-type fuel to meet the miles per gallon requirements set forth in the CAFÉ standards. Ethanol remains a high, clean burning octane source compared to other more toxic octane options currently offered at the pump.

How is Fuel Economy determined?
Fuel Economy is the comparison of engine performance in distance terms with energy usage (miles per gallon). Many different factors affect a vehicle’s fuel economy: excess cargo weight, vehicle condition and maintenance, proper tire inflation, use of air conditioning, consumer driving habits, climate related effects, and gasoline composition - just to name a few. These factors produce cumulative and, in most cases, greater reductions in fuel economy than the use of ethanol in gasoline.

What affects Fuel Economy?
There are several factors the consumer has control over when it comes to achieving the greatest fuel economy. The vehicle must be in a proper state of tune and maintenance; this includes taking simple actions such as meeting appropriate emissions requirements and clean air filters. In some cases, there are factors that result in excess fuel delivery to the engine that cause fuel economy to fall 15% or more compared to the same vehicle that is properly tuned. The consumer should also maintain proper tire pressure, refrain from using cargo racks or driving with items on top of the vehicle, keep the vehicle as aerodynamic as possible by not transporting excess cargo and keeping the windows up, avoid quick acceleration and deceleration action, and minimize the use of air conditioning.

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<thead>
<tr>
<th>Examples of Factors Affecting Fuel Economy</th>
<th>Fuel Economy Loss</th>
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<tr>
<td>Aggressive driving</td>
<td>Can lower gas mileage by 33% on highway/5% around town</td>
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<tr>
<td>Speeding (driving over 50 mph)</td>
<td>Can decrease fuel economy by 7-14%</td>
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<td>Improperly tuned engine</td>
<td>Can decrease fuel economy by 4%</td>
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<tr>
<td>Loaded roof rack</td>
<td>Can decrease fuel economy by 5%</td>
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Fuel Economy and Ethanol
It is important to remember that transportation fuels are not dispensed using a BTU (British Thermal unit) value. Rather, fuel is sold to consumers in gallon increments, which makes it difficult to determine exact fuel economy loss by consumers due to seasonal changes in BTU value of gasoline. Ethanol is typically criticized for having a lower BTU value, while other fuels are not monitored using a particular BTU value. Through the years, data published by various research organizations estimate the fuel economy loss when using 10% ethanol is at least 1.4%, up to a maximum of 3% but highly dependent on the vehicle model, engine state of tune and driving pattern.
Fuel Economy and Higher Level Ethanol Blends
The EPA has approved the use of E15, a fuel blend with 85% gasoline and 15% ethanol, for use in Model Year 2001 and newer vehicles. A study conducted by the Department of Energy found the fuel economy difference between E10 and E15 is about a 1.45% to 1.66% decrease.  

Environmental Consciousness

Tailpipe Emissions and Greenhouse Gases
Air pollution from tailpipe emissions continues to be a concern. Ways to combat poor air quality, and reduce harmful emissions from more fossil fuel use, is through the use of renewable fuels like ethanol. Compared to gasoline which contains toxic chemicals such as benzene a well known carcinogen, ethanol is non-toxic, water soluble and quickly bio-degradable gasoline component. Using ethanol helps reduce carbon dioxide (CO2) emissions of total transportation fuels by up to 30-50% according to EPA calculations.

In 2011, ethanol use in the United States reduced CO2-equivalent greenhouse gas emissions by 25.3 million metric tons. That is equal to the emissions for 4 million vehicles.

Domestic Energy Security

Oil Independence
Each year, the United States sends hundreds of billions of dollars to foreign producers of oil, many of which are hostile to U.S. interests. The Department of Energy recently estimated that the transfer of wealth to oil producing countries, the loss of U.S. economic potential, and sudden oil price movements cost our society the equivalent of an extra $0.92 per gallon of gasoline. Dependence on foreign oil on the other hand has cost the U.S. more than $8 trillion since 1970 according to the Department of Energy.

Ethanol can reduce our oil dependence and ensure national security. In 2011, ethanol displaced 10% of U.S. conventional gasoline consumption. U.S. ethanol growth has reduced oil imports from the Persian Gulf region by 25% since 2000. On a cumulative basis, ethanol accounts for 81% of new domestic fuel production since 2005. With all of this known, ethanol now accounts for one out of every four gallons of fuel produced for gasoline vehicles from domestic energy sources.

Supporting American Jobs
The domestic production of ethanol requires the employment of Americans, therefore creating jobs and sustaining the industry’s part of the workforce. In 2012, 87,292 people were directly employed by the ethanol industry while another 295,969 people were employed in industries indirectly affiliated with ethanol production.

For more information, visit www.EthanolRFA.org or www.ChooseEthanol.com.

1 Department of Energy, Intermediate Ethanol Blends Catalyst Durability Program (2012)

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