

Reading Passage

Ethanol (which is also called ethyl alcohol or grain alcohol, and abbreviated as EtOH) is an alcohol-based alternative fuel that is blended with gasoline to produce a fuel with a higher octane rating and fewer harmful emissions than unblended gasoline. Ethanol is produced by fermenting and distilling grains such as corn, barley and wheat. Another form of ethanol, called bioethanol, can be made from many types of trees and grasses, although the process is more difficult.

The chemical formula for ethanol is $\text{CH}_3\text{CH}_2\text{OH}$. Essentially, ethanol is ethane with a hydrogen molecule replaced by a hydroxyl radical, $-\text{OH}$, which is bonded to a carbon atom. Blends of at least 85 percent ethanol are considered alternative fuels under the Energy Policy Act of 1992. E85, a blend of 85 percent ethanol and 15 percent gasoline, is used in flexible fuel vehicles, which are offered by most major auto manufacturers. Flexible fuel vehicles can run on gasoline, E85, or any combination of the two.

Summarize the important points in the lecture, explaining how they cast doubt on the information presented in the reading passage.

Listening Passage

Despite the government's endorsing of ethanol as an alternative fuel, there are some disadvantages to using it as a fuel source.

Right now, there are fewer than 650 fueling stations for E85 ethanol, mostly in the Midwest. Compare that to 167,000 filling stations nationwide that sell gasoline. To compete with gasoline, an entire pipeline network would need to be constructed, or a virtual pipeline with dedicated tank trucks and railcars. Also, large-scale bio-refineries would have to be built. In many parts of the nation, ethanol is as expensive or more costly than gasoline. Ethanol is harder to ignite in cold climates, and experts argue the percentages, but cars running on E85 get 10 percent to 20 percent fewer miles per gallon than on gasoline.

Will E85 ethanol cost less? It depends where you are. In some Midwest states where ethanol is produced, it can cost around 60 cents less per gallon than gasoline. But since there are so few filling stations with ethanol right now, those stations far from production centers cost more than gasoline and give drivers fewer miles per gallon.

Does using ethanol help the environment? Yes and no. It burns cleaner than gasoline so it emits fewer greenhouse gases. But the planting, maintenance and harvest of corn and other ethanol crops requires diesel fuel and petroleum-derived products like fertilizers and pesticides, so this starts to erode some of ethanol's benefits. But as ethanol technology develops and genetically modified crops are planted in greater numbers, production is expected to become less energy intensive.

I guess it is a mixed bag when it comes to using ethanol over gasoline as a fuel source.

Reading Notes:	Listening Notes
<p>Ethanol is an alcohol-based alternative fuel that is blended with gasoline</p> <p>Has a higher octane rating and fewer harmful emissions than unblended gasoline.</p> <p>Produced by fermenting and distilling grains such as corn, barley and wheat.</p> <p>Chemical formula for ethanol is CH₃CH₂OH.</p> <p>Ethanol is ethane with a hydrogen molecule replaced by a hydroxyl radical.</p> <p>Blends of at least 85 percent ethanol are considered alternative fuels under the Energy Policy Act of 1992.</p> <p>A blend of 85 percent ethanol and 15 percent gasoline is used in flexible fuel vehicles, which are offered by most major auto manufacturers.</p> <p>Flexible fuel vehicles can run on gasoline, E85, or any combination of the two.</p>	<p>Disadvantages to using ethanol as a fuel source.</p> <p>Fewer than 650 fueling stations for E85 ethanol, mostly in the Midwest</p> <p>An entire pipeline network would need to be constructed, or a virtual pipeline with dedicated tank trucks and railcars.</p> <p>Large-scale bio-refineries would have to be built.</p> <p>Ethanol is as expensive or more costly than gasoline.</p> <p>Ethanol is harder to ignite in cold climates</p> <p>Cars running on E85 get 10 percent to 20 percent fewer miles per gallon than on gasoline.</p> <p>Does using ethanol help the environment?</p> <p>Burns cleaner than gasoline so it emits fewer greenhouse gases.</p> <p>But the planting, maintenance and harvest of corn and other ethanol crops requires diesel fuel and petroleum-derived products like fertilizers and pesticides, so this starts to erode some of ethanol's benefits.</p> <p>But as ethanol technology develops and genetically modified crops are planted in greater numbers, production is expected to become less energy intensive.</p>