Wheels: Gary asks in an e-mail, "I am looking to replace my 1999 Ford, F150 pickup truck and want it to be able to use E-85. I want to do my part in reducing our dependence on imported oil. Any suggestions?"

Halderman: There are many trucks that are on the market today that will meet your needs. I suggest that you do some research by checking some web sites, such as www.edmunds.com and Kelley Blue Book at www.kbb.com. Many vehicle manufacturers are equipping vehicles to use E-85, gasoline, or any combination of the two. E-85 is an automotive fuel that contains 85% ethanol (ethyl alcohol) and 15% gasoline. Because ethanol is made from grain (usually corn), it is a renewable resource and reduces our use of petroleum-based fuels. Ethanol can also be made from other products, such as switchgrass and biomass (corn stalks, etc.).

Wheels: It sounds as if E-85 is a great fuel. Are there any negative aspects of using E-85?

Halderman: E-85 does cost less than regular gasoline, but the heat generated by the fuel when it burns in the engine is also less. As a result of the lower heat value, a vehicle using E-85 will result in a loss of fuel economy of about 20% to 30%, depending on driving and weather conditions. For example, a Chevrolet Tahoe is rated at 15 mpg city and 20 mpg highway when using gasoline, but only 11 mpg city and 15 mpg highway when using E-85. E-85 has a higher octane rating than regular gasoline and therefore the vehicle computer is designed to detect the amount of alcohol in the fuel and then the spark timing can be optimized to best take advantage of the higher octane rating. Then there is the matter of where E-85 can be purchased. For the locations of the nearest E-85 station, go to www.e85fuel.com. The closest station in the Dayton, Ohio, area is near Columbus, Ohio, about 70 miles away. For the most part, using E-85 instead of gasoline will cost more. However, you will have the feeling that you are doing something to reduce our use of petroleum.

Wheels: Can E-85 be used in any vehicle?

Halderman: No. Vehicles must be designed and built to operate on E-85. Changes include a different fuel pump, different lines and injectors, as well as either a fuel sensor or a program in the vehicle computer that can detect the percentage of ethanol. All vehicles can operate on fuel containing 10% ethanol, call E-10, but only those vehicles designated flex fuel or variable fuel vehicles can operate on E-85.